ENGAGING THE PERIPHERY
INTEGRATING PORT AND CITY

BY

DARREN DAVID BRATHWAITE

BACHELOR OF ARCHITECTURE
CORNELL UNIVERSITY, 1996

SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE IN ARCHITECTURE STUDIES AT THE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
JUNE 1998

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ABSTRACT

The common urban waterfront is hardly approachable, much less swimmable, encrusted with wharves, switching yards, sewage outfalls and other barnacles. It is the true civic outcast, the ghetto of ghettos, familiar only to longshoremen, sanitary engineers and carp.

THE WATERFRONT

After World War II, a number of factors came together to affect the urban waterfront. Subsequently, these factors lead to the demise, and later the waterfront redevelopment phenomena of our time.

In the 1940's, the United States led the world in a series of technological innovations in Port design and industry. Most pertinent to the urban waterfront was the introduction of the container system which revolutionized the shipping industry, much to the expense of the urban waterfront. Soon after its introduction, the container system became the benchmark system in Port technology rendering the traditional "break bulk" dock facilities obsolete. With this systemic change also came a set of infrastructural requirements. Container ports require large, new spaces, plus more acreage for backup space as well as deeper and wider channels for the ships. In addition, they also require access to transportation and infrastructure, rendering the existing industrial warehouses and their waterfront rail networks useless. As a result, many urban waterfronts became deserted industrial compounds functioning neither as a viable port for industry nor as a waterfront to the city.

At approximately the same time, America's entire pattern of settlement began to shift in the 1950's away from central cities to suburban sprawl. Consequently, vast amounts of urban waterfront land became available, relatively cheaply without dislocating current users. One of the first uses for these abandoned shoreline areas was to aid the burgeoning highway system. As the highway system took hold in the city's infrastructure, the city and the waterfront became alienated entities.

Since the formation of the city as an inhabitable entity, the waterfront has played a key role in its development and its sustenance. Within the context of urban life the waterfront can become a pause or reconnection to serenity, vital to restoring a sense calm to the city's inhabitants. Modern waterfronts should become a "center" of sorts favoring public interests over industry and private enterprise. In this arena, the task of urban design is to provide the necessary interface between the city's core and its periphery therefore engaging the life of the city of the pulse of the people.

With respect to this philosophy, this Thesis attempts to provide an interface between the city's core and its periphery.

Thesis Advisor: Michael Dennis
Professor of Architecture

READER

ELLEN DUNHAM-JONES

ASSISTANT PROFESSOR OF ARCHITECTURE

TO NICOLE.

ACKNOWLEDGMENTS

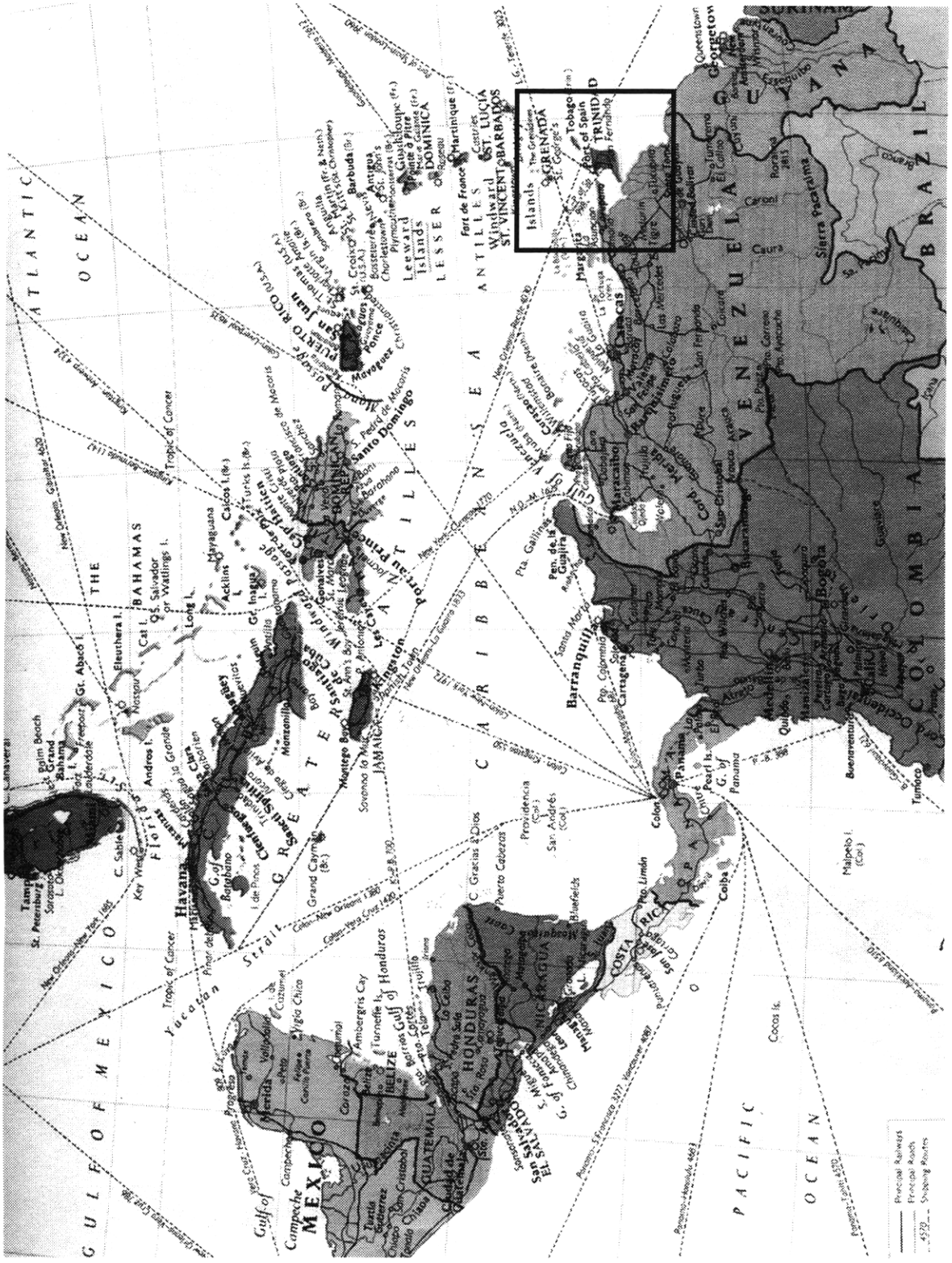
In two months it would be exactly ten years since I migrated to the United States, not knowing where my chosen path would take me.

I would like to take the opportunity to thank all the people who were instrumental in my completion of this Thesis. To my family, thanks for going the last mile with me, "it's been a long road". My friends and colleagues from the S.M.Archs Design Inquiry Group : Sung Ho, Chris, Christina, Megan and last but not least Verle, thanks for a pleasantly stimulating environment. Also to my Urbanism colleagues Bijoy, Ching Yi, Kevin and Frank whose intellectual and cultural diversity have enhanced my academic experience at MIT. I would like to give a special mention to Michael Dennis and Ellen Dunham Jones who has been extremely supportive, and a pleasure to work with, thanks. To Mark Jarzombeck (who I followed here from Cornell) and Bill Porter, thanks for your keen insight and expertise, "I think some of my research may make it to a book someday" I'll keep you posted. At Architectural headquarters, Nancy Jones, Jackie, Jack, Anne and Annette thank you for putting up with me and making my stay at MIT a pleasure. The "Krickets" Richard Daley and Frank Benavides thanks for always having my best interest at heart.

To my friends and family back on the island, according to the African proverb "it takes a village to raise a child", thank you for being my village.

ENGAGING THE PERIPHERY

INTEGRATING PORT AND CITY


ATLANTIC OCEAN
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NICARAGUA
COSTA RICA
PANAMA
COLOMBIA
VENEZUELA
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BRAZIL
CUBA
JAMAICA
HAITI
DOMINICAN REPUBLIC
PUERTO RICO
THE BAHAMAS
LESSER ANTILLES
Windward Islands
Leeward Islands
ST. VINCENT & THE GRENADINES
GRENADA
ST. LUCIA
BARBADOS
TRINIDAD & TOBAGO
Havana
Kingston
Caracas
Bogotá
Panama City
Tropic of Cancer
Yucatan Strait
Gulf of Campeche
Principal Railways
Principal Roads
Shipping Routes


ST. DAVID
ST. GEORGE
Port of Spain
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CARONI
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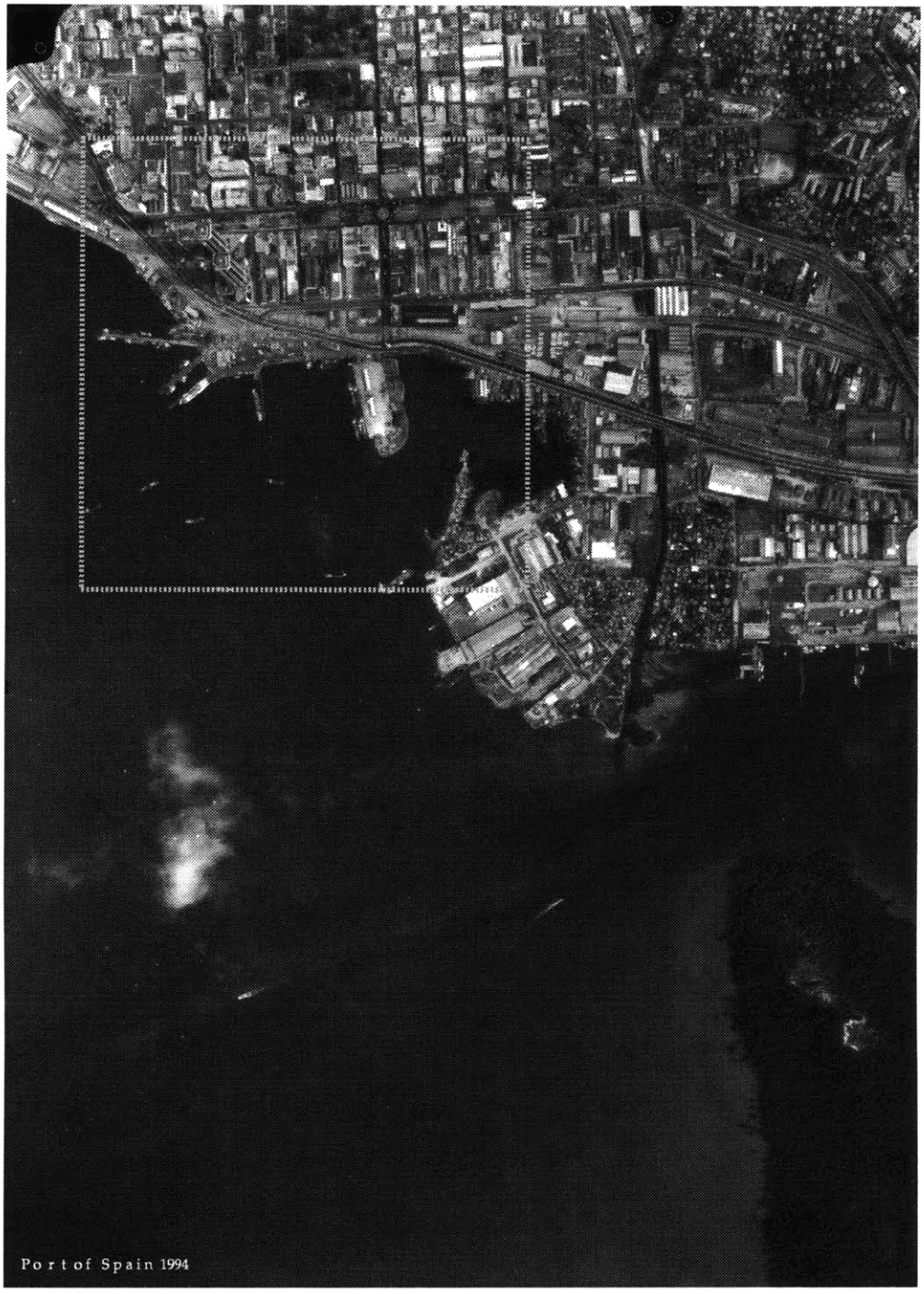
Port of Spain 1994

1

General

- Introduction
- Architectural History
- Regional Architectural Prototype
- Regional Colonial Typologies
- Trinidadian Architecture
- West Indian Urbanism and Town Planning
- Urban Architecture
- Port of Spain : Historical Development
- The demise of Urban Waterfronts
- The Modern Waterfront City
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INTRODUCTION 1.1

The Caribbean as we know it today, is a region originally populated by transplanted peoples between 1498 and 1504 composed primarily of : Europeans searching for treasure in the new world, and approximately 2.5 to 3 million African Slaves (West Africans). Geographically, the Caribbean is an area of more than 2000 miles of sea located to the South of the continental mass of North America, north of South America and east of Central America. Via this geopositioning system, one can immediately discern the a-typical nature of this region; whereas most areas in the world are associated with being of a land mass or continent, the Caribbean's identity is synonymous with a body of water (named after the fierce Carib tribe who once traversed these waters). As we further engage the history and fabric of the region we will discover other realities which harmoniously contradict accepted conventions and beliefs.

For Columbus and other pioneers of the time, the New World offered a sense of adventure, as well as an opportunity to globalize European culture, but above all it allowed the "Old Country" to claim land and its abundant riches for the coffers of the respective colonies. Colonists were drawn to the Caribbean as it was believed that she possessed great wealth of silver and gold. Spain was the first to lay claim to the Caribbean Islands; however as it quickly became apparent that the islands lacked gold or silver in any quantifiable amounts, the Spanish soon lost interest in them. From then on Spain ignored all but the largest and most strategically located islands on which they established garrisons to protect the treasure as the fleet made its way back to the mainland.

For the first forty years or so of their presence in the region, the Spanish Crown dominated the Caribbean; but then, as other nations became aware of the riches Spain was sending home, they were soon enticed by the potential in the Caribbean. By the beginning of the 17th century Spain's stability in the region gradually began to deteriorate as the English and French began claiming their stake in the region. At first they chose areas where Spain's claim was non-existent or tenuous; Bermuda, Virginia,and the jungled coast of the Guianas, and in 1624 both nations established settlements on ST. Kitts.

From this island called the "mother colony of the West Indies", France and England gradually increased their presence in the region as they acquired one island after another . This system of acquisition, colonization and re-colonization spawned a new society, a new culture, and a new architecture.

With respect to influences in the region, it is quite interesting to note that every perceived element which gives the Caribbean it's unique charm and expression originated elsewhere – which was incorporated into a new context giving it a renewed piquant and potency. In this respect, the Caribbean can be best described as a catalyst of sorts which transforms and reinvents its lineage. A prime example of this "transformation", is the Carnival festival which was transplanted to the region by the French settlers. Carnival was brought to Trinidad under Spanish rule by French colonial planters in the 1780's. Under British rule it continued to be observed by the white elite as a European festival, the free coloreds and black slaves having no part in it. However, when slavery ended in 1834, the black and colored masses "took to the streets" transforming the festival into an arena for self expression, liberation and cultural autonomy . Ultimately, what began as a European festival became a celebration of freedom and African culture. Another such example of "regional pirating" is the Palm tree. Palm trees (*coconut trees*) which are one of the quintessential elements in the Caribbean landscape actually originated in India. Sugarcane, another Caribbean icon was also brought to the region in 1637 by the Dutch. In effect, transmogrification sponsored a condition which is both global in its heritage, yet local in its identity. As the region began to develop and trade with various colonies, the Caribbean honed its eclectic sensibilities and applied it to all aspects of life from cultural expression to customs to architecture.

Consequently, the architecture of the Caribbean developed as a synthesis of various influences and social protocols tempered by environmental conditions encountered in the region. Within this framework each island assumes a unique personality. As proof of this, it suffices to note the numerous differences between the houses of Guadeloupe and Martinique, particularly in the foundations and the rhythms of the facades, yet these islands have parallel histories. They were colonized by the same nation and populated with the same ethnic group, yet on each island, the same elements produced different effects and assumed different qualities.

ARCHITECTURAL HISTORY 1.2

Architectural history in the Caribbean is quite difficult to trace, in part due to it's poor documentation, tumultuous history and incremental development. However, even among this aura of ambiguity, it is clear that the genesis of all *modern* Caribbean typologies sprang from the English Georgian tradition and before that, the Medieval tradition. The Medieval tradition however, is not accredited with having contributed significantly to the formulation of the Caribbean residential typology. In addition, due to the Caribbean's remote/isolated nature, the architectural repertoire of the region has no orderly or stylistic progression which characterize the traditional architectural cannon. Beyond this, other pitfalls further shroud the regions true architectural heritage. In particular, the indigenous Amerindian culture which has largely disappeared without the benefit of detailed study or documentation therefore paving the way for historical "contamination" and misinterpretation.

Of the early structures that were constructed in the region, documentation is either very poor or non existent. In the cases when there was documentation, they were extremely inaccurate as they were often drawn from verbal descriptions taken back to the various colonies. This negligent attitude was in part due to the fact that most colonists did not plan to remain in the region for any long period of time, therefore structures were deemed not worthy of glorification or documentation. To further articulate the colonists disinterest in architecture, the early taxation system employed in the West Indies was based solely on the amount of land under cultivation, regardless of what type of structure was erected on the property. The only indirect method for taxing a structure was whether or not it employed glass panes which were imported, and as such was a heavily taxed commodity. This utilitarian attitude towards architecture which favored " the shelter aesthetic" predicated over the first wave of building in the region.

In addition to the general lack of planning or significance attached to early architecture in the Caribbean, the region's tumultuous history further complicates tracing the development of a distinct (localized) architectural vernacular. Documented accounts indicate that some islands have changed hands as much as 14 times, and in the case of Tobago 22 times, therefore eliminating any possible "maturation periods" for it's local culture or architecture.

REGIONAL ARCHITECTURAL PROTOTYPE 1.3

The first documented structures on the islands were the huts of the Amerindians. These were usually round in plan, though occasionally oval, and were generally constructed with small tree trunks vertically oriented with straw and thatch fill. They were very simple structures, without much in the way of foundations or floors. Upon arrival, the colonists quickly adapted their typology to the region by incorporating elements from the Amerindian "Ajoupa". Following this period of typological acclamation the Spanish moved to eliminate the Amerindian prototype as well the peoples who created them. Consequently, any material traces of indigenous culture was systematically eliminated providing a socially, ethnically and culturally neutral site for the synthesis of the European perspective. The architectural style that ensued developed simultaneously with a lifestyle that was specifically Caribbean.

REGIONAL COLONIAL TYPOLOGIES 1.4

Caribbean architecture is first and foremost an architecture for outdoor life. Daily activities take place in spaces that are mostly outside the framework of the house itself who's framework is also open to the outdoors, offering protection only from the sun and the rain.

The Europeans first contribution to the modern Caribbean type was the introduction of various forms of square or oblong huts. This major intervention brought with it two major changes; it not only contradicted the Amerindian cosmological order, it also brought new methods of construction to the Caribbean. The Spanish also pioneered the first comprehensive wall system in the region called Spanish walling. Spanish Walling consisted primarily of a wooden structural frame with masonry or stone infill. Although Spanish in origin this system is found extensively on islands which lack timber. Around this time we begin to observe an emergence of primitive foundations. The second major change in the way of construction was the roofing system. In replacing the indigenous thatch system, the Spanish used a tiled system whereas the French and English used corrugated iron (zinc) extensively.

As time progressed, the Caribbean's climatic and regional conditions would further dictate chane in the typical residential unit. Refining the basic residential unit required a sensitivity to climatic conditions while retaining the functional integrity of the type. Some of the earliest climatic and regional considerations included: multi-peaked roofs, slightly elevated first floors, verandahs, open plan (less restrictive partitioning) and modified fenestration. It is in accommodating the Caribbean climate that the formulation of a truly "indigenous" architecture began. The three most critical elements which transformed the Caribbean residential typology were; extreme humidity (particularly inland), protection from the unrelenting sun and tropical weather phenomenas.

First and foremost with the introduction of the wooden floor at grade level came the problem of decay largely attributed to moisture and dampness at grade. Also, insect damage was quite prevalent due to the moisture and warmth. In response, it was thought that by elevating the structure slightly above grade that the increased airflow beneath the house would reduce moisture at grade level as well as add an additional

cooling system to the units . So by elevating the structure on posts the previous conditions were satisfied. Although these innovations marked substantial improvements to the typology, it still proved unsuitable for life in the West Indies. Further architectural climatizing required a more elaborate or evolved type. Plans were further modified by the need to provide protection from the unrelenting tropical sun. By the end of the 17th Century, "shades", or verandahs had already made their appearance, and a wide variety of covered porches, galleries, verandahs, arcades and loggias were used in the 18th Century, becoming even more common in the 19th Century. It was at this stage of "transformation" that the individual colonies began to develop their own identity or "Caribbean Style".

Porches served two main functions; it shaded the interior of the house from direct sunlight, as well as it added a functioning transition space or zone. Typically, in hot climates it is often more pleasant outdoors than indoors. Between these two domains extra muros and intra muros, lies the gallery or verandah, the spatial, functional and social mediator. Via this compositional change we begin to see the emergence of layered space or zones ranging from public to semi public to semi private to private.

In addition to the unrelenting tropical sun and attendant regional humidity, storms, hurricanes and other tropical phenomena also imposed their own typological modifications. The frequent devastating hurricanes, and the threat of earthquakes, led the settlers to prefer houses that were built low, generally with no more than two stories. The need to keep roofs low was satisfied by covering large structures with multiple hipped roofs therefore reducing the gable height needed for a single longspan. Heavy storm shutters proved useful in protecting windows against storms and driving winds, some earlier houses were even built with storm shelters incorporated into their design. Technology of the time did not permit design for seismic activity, however colonists relied heavily on the elevated concrete base as both storm shelter and foundation. Moving to the interior, one can also observe climatic concessions. Compositionally, the Colonists seem to have anticipated the "open plan" by separating functions/rooms with open arches rather than closed partitions, or with partitions that did not extend all the way to the ceiling. This feature proved vital in providing much needed through ventilation, therefore promoting cooler interiors.

By the early to mid 1800's we begin to see a typological and stylisticdivergence as the various colonists began to develop their own colonial 'DNA'. Via this DNA one can identify structures as being characteristic of a particular colonizer. Generally, on Islands with Spanish or French influences, the Porches or verandahs are generally smaller and tend to directly overlook the main street (situated to the front of the house), whereas on Islands of English influence the Porch is larger and is almost invariably located off to the side, or to the rear of the dwelling. Also, on islands of English influence facades are generally symmetrical (*largely influenced by Inigo Jones study of Palladian Villas*) while on islands of French and Spanish influence they are consistently asymmetrical. On English islands roof peaks (Gables) tend to be of consistent height within a structure/facade, whereas on French islands they tend to vary. English and French islands favour metal corrugated roofs, whereas Spanish islands prefer tiled roofs. In terms of decoration, traditionally French islands use elaborate structurally integrated metalwork as part of their architectural repertoire. However, it is interesting to note that on English islands there are also elaborate ornamentation (fretwork) however it is usually made of wood and is merely decorative. In Trinidad we find both systems employed, in some cases in the same structure. In more general terms Trinidadian architecture defies all regional categories, and is probably the most evolved type of all Caribbean architecture

Another interesting fact regarding regional influences is whether islands were populated by English, French, Spanish or Dutch, the dominant style tended to be Georgian English architecture with the exception of Trinidad. This proliferation of Georgian English architecture which consumed the Caribbean is attributed to a number of factors. In the mid 18C there was a rapid dissemination of Georgian Builders handbooks which clearly became the standard archetype constructed in that period. Secondly, in terms of the colonists, the British constituted the largest group of settlers to populate the region, therefore perpetuating the Georgian tradition native to their homeland. Also, apart from migration to the Caribbean, there was also tremendous internal migration between islands, this allowed the Georgian tradition to be thoroughly disseminated as most of the colonists were British.

TRINIDADIAN ARCHITECTURE 1.5

Although no island represents an absolute condition or type onto itself, one island stands apart as an extreeme typological variant and as such can be considered as a unique type onto itself. Trinidad represents a study in extremes: it is the southern most island in the Caribbean, with the most diverse population, the largest Carnival, and the most charmingly disparate architecture. 1797 the capitulation of the last Spanish Governor marked a pivotal point in the island's history setting the stage for the Caribbean's most diverse nation. At this time, the island appeared to be in a state of social, cultural and political instability, not in terms of control of the island, but in terms of its self definition and identity. This state was communicated in 1806 when General Hislop (*British*) complained to the Secretary of State:

"To govern a colony peopled by such a heterogeneous composition is no easy task to keep such a population in order. There are no local laws for the Government of this Colony: the only law is Spanish law made by the King of Spain"

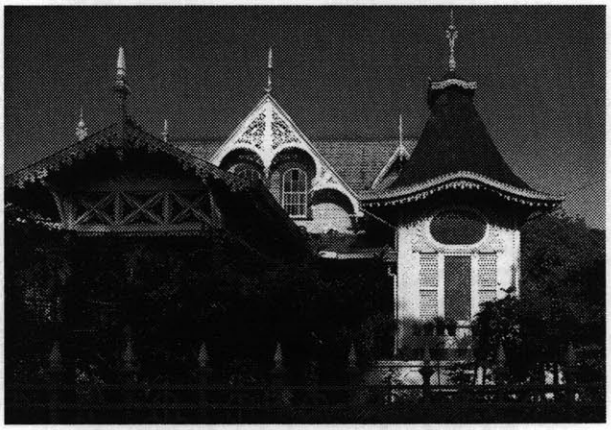
This situation led to more serious internal issues: how could the Spanish own the country yet not be in control of it and how could the British be running the country with Spanish laws and a French population. As perplexity swept the island, the Trinidadian culture began to evolve.

Without an Imperial government imposing a harsh will, the remaining Amerindians practiced their arts. They developed their houses without having to express the conquerors' symbolism. The Spaniards did the same developing what was there for purely practical needs instead of imposing European forms. In turn, the French did not have to impress, dominate and discipline; they were freed of the strain of office, and so a French Creole style, natural, unrestricted and free developed. This historical circumstance allowed Trinidadians to use architectural language and ornament as a means of self expression and individuality. Although this freedom was welcomed, the resultant structures/ motifs were declassed and with nationalism and all political sense removed from it. With this, we find the Amerindian Ajoupa style carried through, clad in various ways subject to any creative impulse the populous saw fit. However before any real architectural vernacular could develop, the country had to establish control over its citizens as well as over the order of its cities. Horrified by the "Latin mess" the British soon moved to impose a rigid order on the colony.

The early to mid 1800's marked a significant milestone in Trinidadian architecture. British rule in Trinidad coincided with the onset of the "timber culture", and the arrival of George Brown. Prior to the arrival of George Brown in 1883, the advent of light timber frame construction greatly influenced regional Caribbean Architecture. Timber frame construction was developed by in 1835 by George Washington Snow, and was imported to Trinidad via French settlers who historically had trade ties with USA. Via this relationship, the "Ajoupa" (traditional type) was now buildable by imported, prefabricated, precut standardized, wood sections: the 4"x 2", 6"x 2", 8"x 12" and 6"x 1".

The second major milestone in Trinidadian architecture came in 1883 with the arrival of George Brown. Born in 1852 at Strathmiglo, Scotland, and educated as an architect and builder at Glasgow University (prior to Charles Rennie Mackintosh). Brown came to Trinidad in 1883, a move which would prove to be a pivotal point in his career, as well as for the city of Port Of Spain. Upon arrival in Trinidad, he immediately moved to establish a localized brand or style of Architecture, "trampling on the established order, an act which would set Trinidad apart from the other islands of the Antilles. He raised the house high off the ground , nearly doubled the ground floor height in an attempt to create a piano nobile, elongated slender posts holding up the roof formed galleries on both floors. Brown also isolated the roof into a decorative lid, and redesigned and standardized doors, windows, railings and jalousies. One of Brown's major innovations was in his articulation of the floating roof plane. The French tended to blend the walls to the roof by changes of pitch, dormer windows, mansard pitches, matching materials as well as small overhangs. In essence, all exterior walls appeared to flow up into the roof and down the other side of the house. This was the general vernacular employed in early Trinidad. Brown modified (flattened) the pitch in his roofs and extended his eaves, producing a sharp lid or "hat" effect. His roof appeared to sail over the open galleries producing a distinct, definite articulation between the facade and the roof. From street level the roof pitch can hardly be seen, adding to the floating effect.

The invention of the fretsaw added a new dimension of expression to the evolving Trinidadian vernacular. Invented in 1865, the fretsaw allowed mass production of elaborate decorative timberwork which provided George Brown andothers a license to introduce flawless ornamentation into their designs. As these elaborate fretwork designs became popular particularly in residential architecture, they became known as the "Ginger bread" house (*Gingerbread houses are found mainly in Trinidad and Haiti*). In addition to emerging technology, a new socio-econonic and political climate was forming, providing greater upward mobility for its citizens and a greater sense individuality. With the emancipation came the independence of farmers and tradesmen allowing individuals a modest degree of prosperity.



GINGERBREAD HOUSE, Trinidad

TYPOLOGICAL DEVELOPMENT (URBAN)

AMERINDIAN
1500 AD

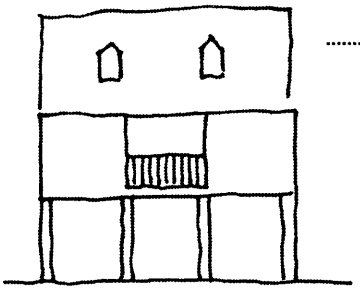
SPANISH
1600 AD

SPANISH
1700 AD

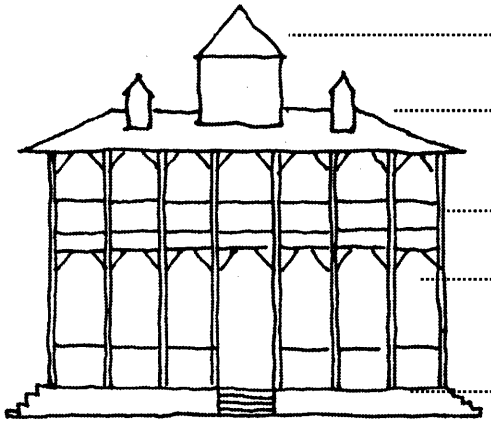
FRENCH
1800 AD

FRENCH
1850 AD

BRITISH
1900 AD



FRENCH CREOLE (THE STYLE BEFORE GEORGE BROWN)



INTRODUCED THE LANTERN LIGHT

SHARPENING THE EAVES, TURNING THE ROOF INTO A LID

NARROWED THE COLUMN SPACING

RAISED THE HEIGHT OF THE LOWER STOREY

ELEVATED THE DATUM BY ADDING A PODIUM

This promoted an influx of West African motifs, colors and architectural sensibilities which imposed itself upon the existing colonial derivative altering its proportions and spatial disposition. For example the European prototype was based on an 18'-0"x 18'-0" module, whereas the African module was approximately 9'-0"x 9'-0" +/- 1'-2', therefore dictating smaller houses. Also, in the European model the entrance tended to be along the long end, as opposed to along the gable end in the African model. Apart from the Africanizing of the residential type, we also began to see the emergence of Afrocentric settlement patterns. Contradictory to the rigor and harsh ordering imposed by British town planning, the African model established compound communities called yards. Yards are generally amorphous in shape (sometimes oval) and sporadic in development, taking its root in African village compounds.

The Post-Emancipation period saw the introduction of another ethnic group into the mix. After slave Emancipation, an alternative labor source became urgent

in many islands, prompting Britain to investigate the 'indentured laborer' system on a large scale. Various sources were unsuccessfully tried, including European, Chinese, Madeiras (Portuguese), Maltese and free Africans. Indian laborers predominantly from the Ganges Plains proved satisfactory. Immigrants arrived in Trinidad in 1845 further altering the Islands ethnicity and architectural repertoire. As this indentured workforce arrived under more favorable conditions than there African counterpart they retained more of there language, culture and family lineage. At 40% of the Trinidadian population, this group further altered the course of Trini style architecture. They remain as the only ethnic group who's architecture in itself remained relatively uninfluenced, however who's motifs influenced and were incorporated into the local vernacular. As such the local vernacular received yet another source to inspire and create.

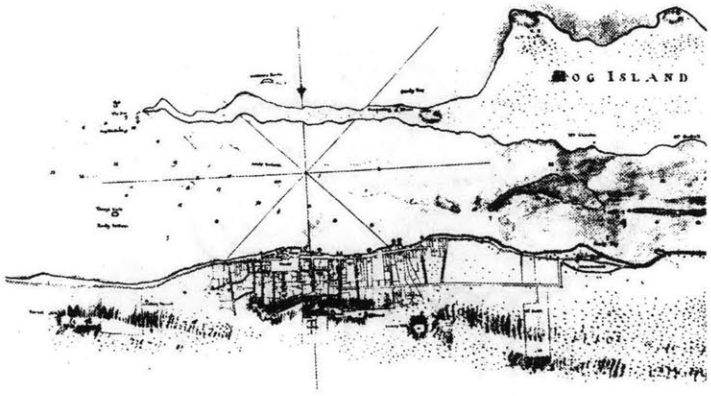
Trinidadian architecture can be viewed as a type in itself which effectively interprets and encrypts the islands rich history. It's architecture celebrates spontaneity and individuality. Amiably disparate, one can find quoined corners (*English origin*), dormer windows (*French origin*) and Spanish Walling all residing comfortablyunder one roof. But what is most potent about this architecture, is not it's claim to its colonial founders, but rather its diversity, its ability to evolve without boundaries, categories or definition. In the case of Trinidad we find a vernacular that is at peace with itself and at war with historians who have yet to acknowledge the significance of this multi-faceted construct.

In broader terms "The Caribbean style" represents a vernacular architecture without official agreement or approval. It is not born out of learned concepts(except maybe symmetry/ a-symmetry) and is not aligned with the traditional architectural cannon, instead it can best be surmised as an architecture of contingency and improvisation. Collectively the architecture of Caribbean relates more to each other than to their respective colonizers, affirming the unique potency and happenstance of the region. In the end, in terms of lineage, the architecture is the result of Amerindian techniques incorporated into a Spanish unit with French and African modifications assembled with American technology.

WEST INDIAN URBANISM AND TOWN PLANNING 1.6

The first West Indian towns were not planned entities; they grew up as small collections of huts near the forts and wharves. Their purpose was strictly utilitarian and development was haphazard. The typical format employed in West Indian Urbanism was first a straggling line of houses would be established along the shoreline. A second street parallel to the one along the shoreline was added when needed, with alleys or smaller cross streets connecting the two. The This was repeated as the city moved inland (see pg 73). The Urban Fabric which resulted was medieval in it's narrow twisting streets lined with tall houses built closely together. However the Caribbean medieval town had two major differences to its European predecessors: the scale of the city was much more diminutive and the focus of the town was on the fort and the wharf as opposed to the church and the monastery evident in the medieval European models.

Another criteria which affected the location and character of the Caribbean town was the issue of defense as war and frequent invasions were commonplace in 18 C. life. This tumultuous climate dictated the prevalent attitude towards defense common to town planning in the 17thC.. As these shoreline towns grew the streets along the waterfront became lined with warehouses, each extending out on a private jetty, on the seaward side; on the inland side the streetscape was littered with shoddily constructed residential scale structures. These structures were primarily shops with living quarters above it. As more of these shop/townhouse configurations began appearing on streets perpendicular to the coast the notion of the coastal "main street" shifted inland as the early forms of Caribbean Urbanism developed.



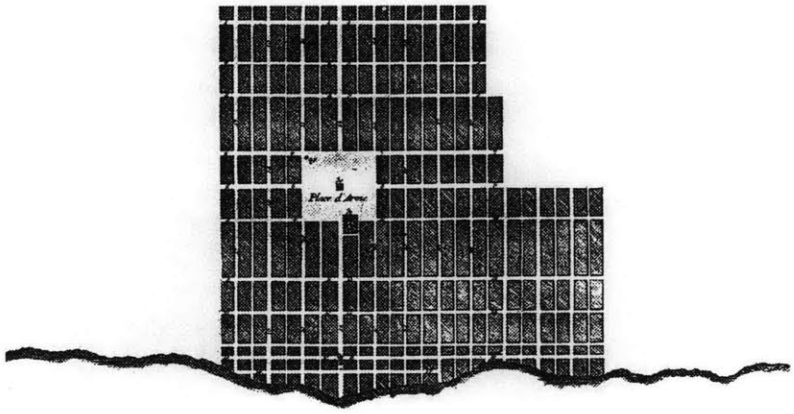
PLAN OF NASSAU, Bahamas 1800 showing typical coastline development

With an intensifying commercial climate, Caribbean cities became hubs of activity, and with it came increasing land prices. Expensive land within town limits led to the practice of building up as opposed to building out, a practice which proved to be not only impractical in the West Indies, but often deadly. Structures which had more of a vertical emphasis fell easy prey to hurricane, earthquakes and other regional phenomena.

Another dangerous practice in town building was the extensive use of timber and thatch as a building material. As a consequence many early towns fell victim to devastating fires which plagued towns of the time. In the 18thC. an attempt was made in several islands to introduce building codes specifying the use of non flammable materials, the distance between buildings and their maximum heights; these were difficult to enforce and towns continued to suffer frequent fires.

The first planned town in the West Indies was probably Kingston, Jamaica, laid out after the earthquake which destroyed Port Royal in 1692. By this time the Spanish had been building planned towns with a regular street grid centering on an open square. After the British seized Jamaica from the Spanish, they continued the system expanding while conforming to the established order. It might seem that, given the opportunity to build new towns from the ground up in the colonies, the settlers would erect towns that showed the influence formal town planning, but their utilitarian philosophy prevailed. The simple grid iron was the most efficient, but instead of focusing the streets on the town on important buildings or squares, they still planned a seafront town.

PLAN DE LA VILLE DE KINGSTON



PLAN OF KINGSTON, Jamaica 1764

The most important street was the street along the shore, which they designated for the merchants to be used as "the main street". These main streets functioned as market, town center and military barracks. Kingston's master plan set aside a large area of land in the center, however because the town grew so slowly, this area remained on the outskirts of the actual settled areas for many years. This was to be the town square where the church and other monumental structures would be built. This proposal prompted the most influential citizens to accuire property surrounding the square, as they probably envisioned a sort of elegant residential quarter similar to those built in England after the Great Fire. Unfortunately, they did not build on these lots, and the square was soon preempted by the military. Barracks and powder magazines were built in one corner, and the square was named The Parade. This move is quite significant and common in West Indian towns, in that it prioritizes military concerns over those of civilians as warfare and the threat of invasions were an unexcapable reality in 18C life.

In spite of its master plan Kingston continued to develop according to the coastal model, building along the shore then back towards the interior. Its lack of any real architectural focus becomes clear when it is compared to Williamsburgh, Virginia, which was laid out only seven years later. The plan of Williamsburgh called for a wide central avenue, one end occupied by the Capital and the other by the College of William and Mary. This was crossed by a long esplanade leading to the Governor's Palace, with a large market square in the cente of the town. The fundamental difference between these two layouts is really one of phillosophy and occasion: Williamsburgh was planned as a sort of ceremonial center, while Kingston was purely practical (see pg 72).

Christiansted, St. Croix, is a more sucessful example of a planned town. It was first laid out in 1734, and grew in an orderly manner according to a strict building code. As a result it did not suffer from devastating fires which plagued other towns, and today represents a perfect example of an 18th century West Indian town.

St. Croix's plan is again basically a grid, but its orientation, which neither runs parallel to the shore, nor is it aligned with the Cardinal points, which seems in explicable on the map. However a furthur analysis woud reveal that its apparently peculiar orientation is in response to a series of low foothills which extend almost to the coastline (see pg 74).

URBAN ARCHITECTURE 1.7

West Indian towns were essentially trade based; because of this trade, which constantly brought a wealth of foreign influences(cultural, economic, political etc.) to the Port/towns, the urban architecture that ensued tended toward a more cosmopolitian nature that would be found in sub-urban or rural Plantations . Stylistic differences do exist among the towns of the West Indies, however the basic nature of the architecture, functional as it was, remains very similar regardless if the builders were English, French or Dutch.

Warehouses

After the forts that protected shipping, warehouses were the most important in a town; guarding a planters entire crop- his whole income for the year - until it could be shipped. These structures functioned as "banks" which explains the strength and solidity of its architecture. Warehouses were usually the first masonry structures to be erected after the fort, and they were so solidly constructed that they have stood for centuries. The usual arrangement was for the warehouse to be situated on the seaward side of the main street, perpendicular to it, and often extending to, or along a wharf. These docks have since been cleared away in almost every West Indian town.

The warehouse itself was usually of stone blocks, rubble masonry, or brick; they were wide double doors, often arched, allong along its length. A narrow railway might extend along the wharf beside the wharehouse to aid the transport of goods. Most wharehouses were usually one story high, although at the end of the street(corner) they may be combined with a shop/townhouse in which case they would be two stories.

Shop/townhouse

The combined shop and townhouse can be described as a typical West Indian typology which appears throughout the region, including peripheral areas which traded with Caribbean towns (Curacao, Bonaire, Aruba). The upper side of the shore street was usually lined with such shop/townhouses, and they occupied much of the adjacent commercial streets.

The heavy masonry ground floors of these buildings, with their solid double doors on the street, echo the solidity of the waterfront warehouses, while the upper floor, with its delicate balcony, may achieve considerable grace and lightness, almost ephemeral by comparison. In some cases details from pattern books give an aura of sophistication to these structures, while in others only graceful proportions and delicate balconies of iron or turned wood reveal their severity.

Basically these shop/townhouses fall into two types: one with the front walls of both lower and upper stories on the same plane; and the other with a second story overhang. The former type being more common, especially on french islands, though not limited to them.

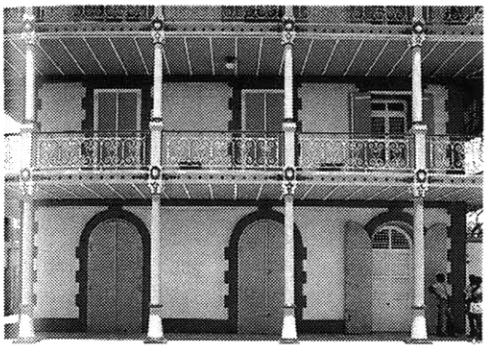
Townhouses

Urban dwelling houses occupy the remaining streets of the town, often mixed with shop buildings. There is a great deal more variety of types in these townhouses, from the elegant residences of planters and wealthy merchants to ramshackle houses inhabited by the poorer classes.

The townhouses of the wealthy, like their country houses, were often built according to the dictates of its European predecessors. Townhouses were also built over existing shops, either with balconies or overhanging second stories. They may have windows replacing some of the double doors on the street, or they may be distinguished from shop buildings only by the use of the ground floor for storage or living quarters.

SHOP/ TOWNHOUSE. Guadeloupe

SHOP / TOWNHOUSE. Haiti



TOWNHOUSE. (typical) Guadeloupe,Haiti.

Another variant of the townhouse typology takes its roots from the galleried plantation house. In an urban context however, the gallery is used more as a cooling off space, as opposed to as a belvedere in the plantation model. Also, due to the lack of space in an urban context, the galleried townhouse usually only has galleries across the front, and these are far more likely to be screened from the street by louvered panels than they would be in the country.

PORT OF SPAIN: HISTORICAL DEVELOPMENT 1.8

Sir Walter Raleigh landed in Port of Spain in 1591 and claimed the island for England. After massacring the garrison he went on to capture the Spanish governor at St. Joseph, who he imprisoned and later who's help he enlisted in the search for Manoa, land of gold ruled by the golden king El Dorado.

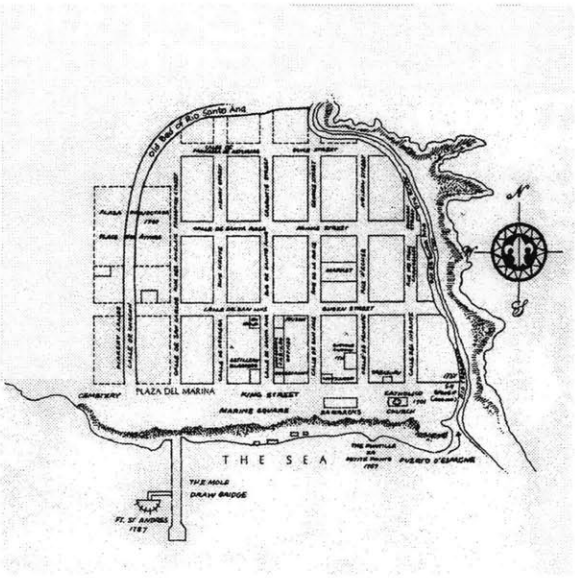
From its earliest inception, Port of Spain existed as a mere fishing village with a handful of fishing huts and Indian(Amerindian) settlements on a muddy mangrove shore. At that time St. Joseph was the important administrative center on the island where the governor and the Cabildo (town council) governed the islands inhabitants. In 1757 the newly arrived Spanish Governor was greeted by the dilapidated Governal residence which had fallen into a state of extreme disrepair. After a futile attempt to find a suitable replacement from the extremely limited housing stock in St. Joseph, the governor decided to make Port of Spain his place of residence, consequently shifting the islands capital. This caused considerable dispute between the governor and the town council, which was not resolved until 1784 when Port of Spain was declared the official capital. The first meeting of the Cabildo was held in Port of Spain on 12th December 1783. By that time St. Joseph had lost much of its prestige, and Port of Spain was gaining notoriety for its commerce and trade; the fishing village of 200 years had suddenly come alive.

In 1760 the population numbered approximately 400. Demographically, the town was comprised of a mixture of Indianised half- breed Spaniards and French immigrants. Throughout the 1760's commerce and trade continued to increase, so much so that ten years after the transfer of the capital to Port of Spain the town began to exceed the city limits. Despite this apparent development, the true colonization of Trinidad did not begin until the end of the 18 Century. In 1783, the Spanish King, acting on the advice of a French planter named Roume de St. Laurent, issued the historic Cedula of Population, designed to attract immigrants to the island. The terms of the Cedula, proclaimed in 1783, offered free grants of land to citizens of any land friendly to Spain, provided that they were Roman Catholic. This meant that most of the new settlers were French, since England Spain's other ally at the time was mostly Protestant. Almost overnight, Trinidad was transformed into a colonized island, with French planters and persons of color flocking from neighboring islands.

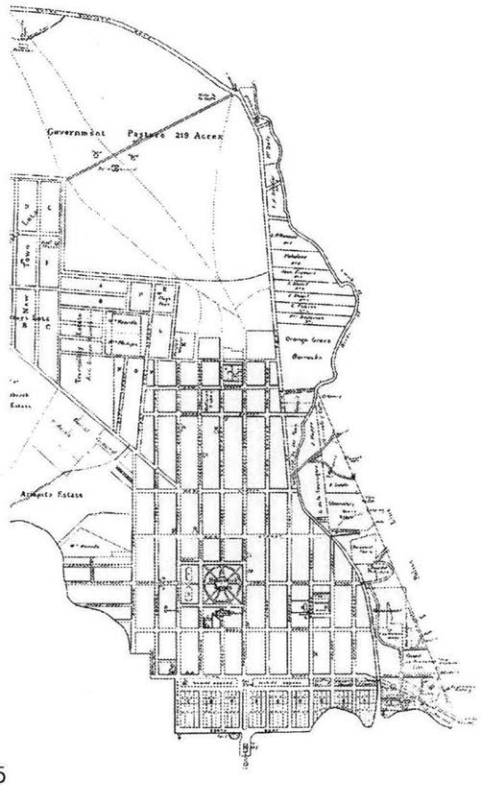
The population leapt from 2,700 inhabitants in 1783 to 17,770 in 1789 ;10,000 of whom were African slaves imported in large numbers as the Cedula allowed extra land grants for each slave owned. The influx of these French colonists coupled to increased industry, commerce and trade, further aggravated the city's chronic housing and land shortage. The demand for housing was so great, that arriving immigrants were required to be able to pay one year's rent in advance to be considered for housing. As a result it became necessary to extend the boundaries of Port of Spain to accommodate both its new residents and its expanding industry.

The need for expansion prompted the re routing of the St. Ann's river from the western edge of the city to the eastern edge of the city (now called The East Dry River) to facilitate expansion to the west. In 1787, Don Maria Chacon, the governor, announced that the necessary funds had been advanced by the King to employ 638 slaves and 405 free men of color that live within the register of the town to execute the task. At that time, the city was laid out in eleven streets (which lies to the south east corner of the present city plan) seven streets running north south and four streets running east to west. The re-routing of the St. Ann's river ushered in a new wave of expansion, however prior to the actual extension of the urban fabric, the cramped overpopulated city fell victim to the great fire of 1808 which destroyed the majority of the city. Three thousand of the city's five thousand homes were totally destroyed, twelve blocks completely destroyed and nine partially destroyed.

On April 4th, ten days after the fire, an ordinance was passed, which among other things prohibited the erection of wooden houses and the use of shingles within city limits. Despite this edict, the urgency of rehousing the population was so pressing that the law was infringed on all sides, as wood was the most easily attainable building material. As the city scrambled to re-house its residents, it was clear that a new urban plan was imminent. The British, who had captured the island from the Spanish only eleven years earlier seized the opportunity to execute a new plan for the devastated city. The new plan for Port of Spain initiated in 1808 delineated a main central square (Woodford Square) significantly wider streets in a grided format and stricter land use ordinances. However, by 1845 despite the dictates of the master plan and other efforts to develop a cohesive planned city, expansion to the west followed the basic format of West Indian Urbanism. This format dictated building parallel to the city's shifting shoreline, after which a second street parallel to the first was added when needed, with alleys or smaller streets connecting the two.



PORT OF SPAIN 1757
Map showing the city's first eleven streets



PORT OF SPAIN 1845
The "New Plan" after the Great Fire of 1808.

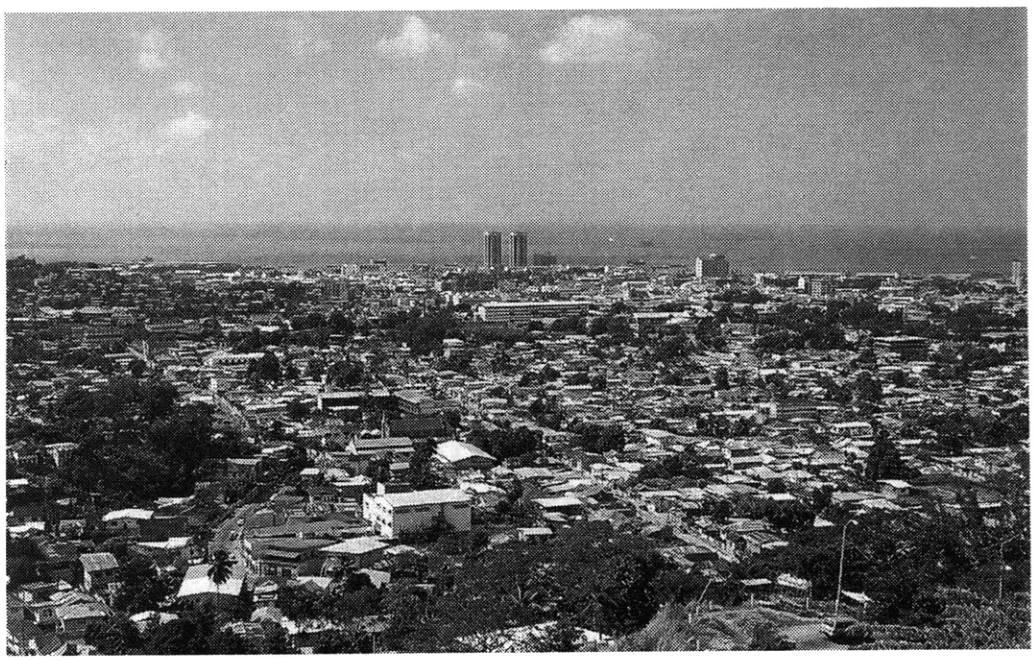
As a consequence of this utilitarian phenomena Port of Spain developed as a series of irrelevant grid shifts derived from developing block patterns from the shifting coastline. What was intended to be a centralized town, clearly developed as a port town.As colonial trading increased, the ports became more developed, consuming much of the city's coastline within city limits making the waterfront the undisputed town center.

Between 1845 and 1925 proved to be a pivotal point in both the history and the development of Port of Spain. This period witnessed the abolition of slavery and consequently the birth of a new urban fabric. Most consequential to the urban fabric was the parceling off of plantation lots within city limits into salable residential lots formerly known as Woodbrook and Ariapita Estates. Although the system of slavery had been officially abolished giving slaves the freedom to build settled communities, society still subscribed to a system of indentured servitude, and racial segregation. This reality condemned blacks to the east along the East Dry River forming the districts of Belmont and Laventille, while the White elite and middle class occupied St. Clair, Newtown and Woodbrook. St. Clair, Newtown and Woodbrook retained their grided street patterns, however Belmont and Laventile developed more as amorphous entities, tending more toward the radial format inherent in afrocentric settlement patterns.

PORT OF SPAIN, 1925
Map showing shoreline prior to Port expansion.

In addition to its developing architectural and urban fabric, the city began to reclaim land to the south gradually filling in the land between Marine Square and Fort San Andres which had previously been engulfed by marshland. By the mid to late 1920's the city had evolved to a state of relative solidity disposed in a manner consistent with the prevailing utilitarian philosophy. Around this time the notion of the city began to depart from the port city mentality to that of the "main street" notion of town center. This shift in Paradigm coincided with an enormous land reclaiming campaign along the western shore of Port of Spain, largely for expanded shipping facilities, henceforth marking the "official separation" of the city from the waterfront. Shortly after the 1940's a change in shipping technology to the container system rendered much of the existing facilities obsolete overnight changing Port of Spain waterfront from a busy port to a deserted industrial compound.

Over the years some berths have been refitted with modern rigging and shipping facilities, in an attempt to conform to the global standards of the shipping industry. Today the "Rusty Rim" persists as the majority of the residual structures have largely remained abandoned as testimony to Port of Spain's heritage as a port city.



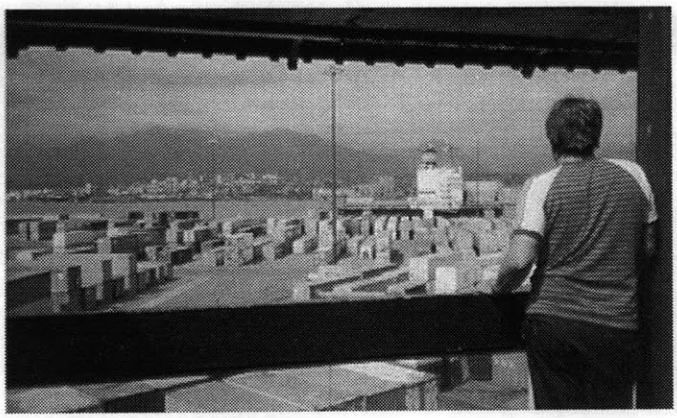
CITY OF PORT OF SPAIN, Trinidad, WI.

THE DEMISE OF URBAN WATERFRONTS : Technological change 1.9

The common urban waterfront is hardly approachable, much less swimmable, encrusted with wharves, switching yards, sewage outfalls and other barnacles. It is the true civic outcast, the ghetto of ghettos, familiar only to longshoremen, sanitary engineers and carp.

After World War II, a number of factors came together to affect the urban waterfront. Subsequently, these factors lead to the demise, and later the waterfront redevelopment phenomena
of our time.

In the 1940's, the United States led the world in a series of technological innovations in Port design and industry. Most pertinent to the urban waterfront was the introduction of the container system which revolutionized the shipping industry, much to the expense of the urban waterfront. Soon after its introduction, the container system became the benchmark system in Port technology rendering the traditional "break bulk" dock facilities obsolete. With this systemic change also came a set of infrastructural requirements. Container ports require large, new spaces, plus more acreage for backup space as well as deeper and wider channels for the ships. In addition, they also require access to transportation and infrastructure, rendering the existing industrial warehouses and their waterfront rail networks useless. As a result, many urban waterfronts became deserted industrial compounds functioning neither as a viable port for industry nor as a waterfront to the city.



CONTAINERS ON PORT, Vancouver

At approximately the same time, America's entire pattern of settlement began to shift in the 1950's away from central cities to suburban sprawl. Consequently, vast amounts of urban waterfront land became available, relatively cheaply without dislocating current users. One of the first uses for these abandoned shoreline areas was to aid the burgeoning highway system. As the highway system took hold in the city's infrastructure, the city and the waterfront became alienated entities.

CONTAINERS ON HARBOUR, Barcelona

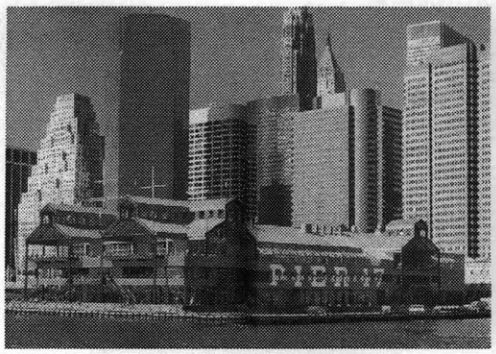
ARTERY DIVIDES CITY AND WATERFRONT. Boston, MA

THE MODERN WATERFRONT CITY 1.10

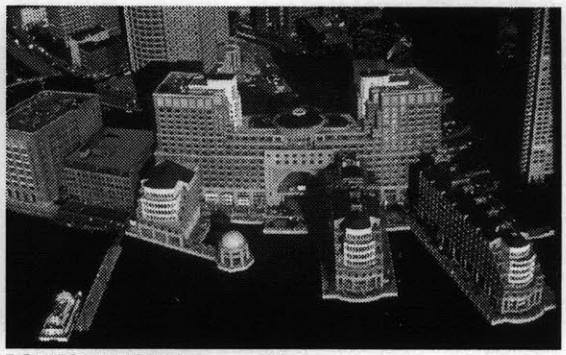
Since the formation of the city as an inhabitable entity, the waterfront has played a key role in its development and its sustenance. In early cities connection to water was both a resource and a liability - as a resource it facilitated trade and the transport of goods, however it also made the city venerable to naval attacks. In the 20C the probability of naval attacks and hostile invasions have diminished, however its use as a trade and leisure hub persists. Within the context of urban life the waterfront has become a pause or reconnection to serenity, vital to restoring a sense calm to the city's inhabitants. Modern waterfronts have become a "city center" of sorts favoring the public interests over private enterprise. Within this arena, the task of urban design is to provide the necessary interface between the city's core and its periphery.

In the 21st century and beyond, the urban waterfront is poised to play a significant role in urban life by engaging the pulse of the people and the life of the city.

With respect to the Caribbean, particularly in the tourist industry, the coastline and urban waterfronts are an indispensable resource which should be engaged and developed to its maximum potential . The challenge for Caribbean cities is to rediscover their heritage as Port cities while re inventing their lineage for life in the twentieth century and beyond.

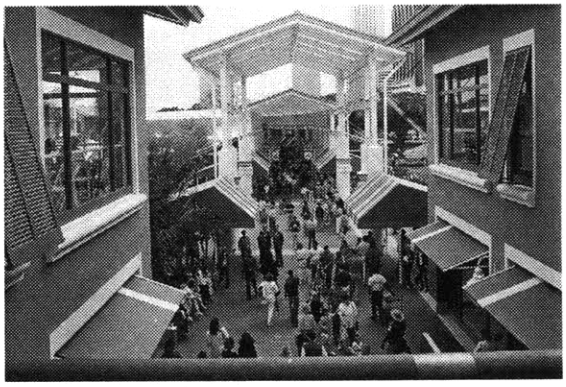


SOUTH STREET SEAPORT.PIER 17, New York.

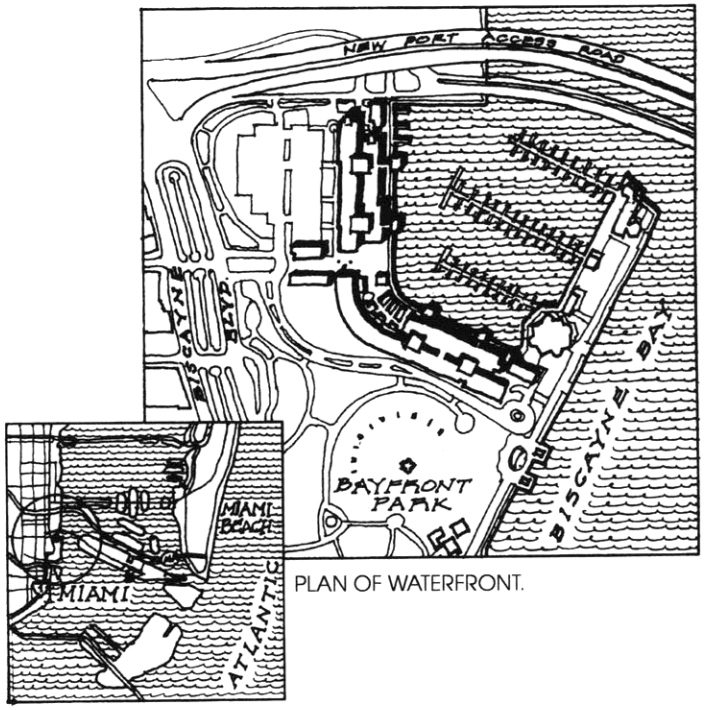


ROWES WHARF. Boston, MA

BAYSIDE MARKETPLACE, Miami, FL.



VIEW OF OPEN AIR MALL



PLAN OF WATERFRONT.

PORT OF SPAIN TODAY 1.11

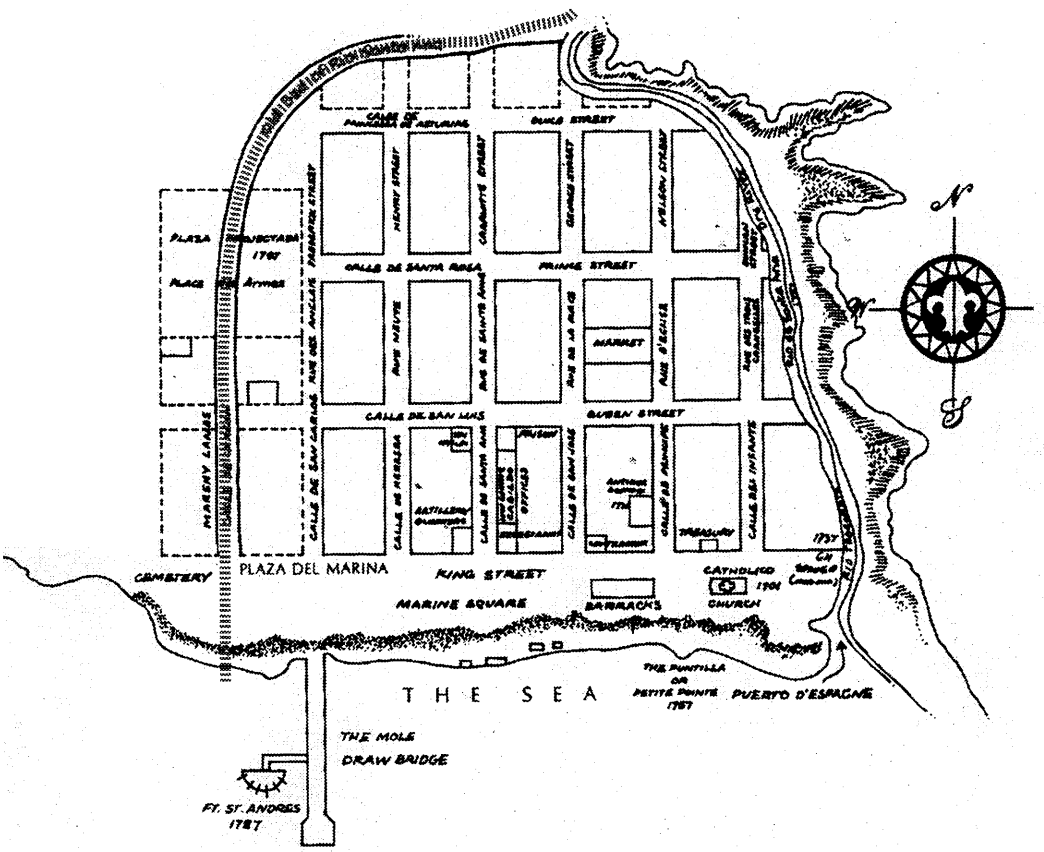
As it exists today Port of Spain represents a fine blend of urban decay and urban renewal tempered by economic instability. Port of Spain, like other regional cities stands as gleaming examples of antithetical town planning and urban development. Its urban experience is both ambiguous and disjointed, its fabric appears unintelligible and haphazard as if to imply that the city "just happened".

Following the pattern established by the colonists Port of Spain has arrived in the 20 C. bringing with it its dated approach to the waterfront which is both outdated and underutilized. These urban deserts have become the face of the city which functions neither as a port for cruseiships/tourism, nor as a waterfront for the city. Over the years the gradual separation of waterfront and city has rendered the city incoherent. Notions of center, spatial sequence and cohesion have been left to their own devices producing a sort urban anonymity. One is compelled to ponder between Woodford Square and the Brian Lara Promenade, between the Red House and the twin towers, between Independence Square and Queens Park, the once clear hierarchy is now non existent. Building on this hodgepodge has made a bad scenario progressively worse.

In recent times there has been improved economic stability, and with it a renewed sense of obligation to the waterfront. Central to this philosophy is the shift toward tourism making the waterfront once again an attractive resource. However two steps forward has somehow equated three steps back, further aggravating the city's urban issues. Piecemeal port development on the waterfront spawned by a quick fix mentality has further handicapped the development of comprehensive urban plan designed to benefit both tourism as well as Port of Spain residents . While current development begins to speak to the issue of tourism, it neglects the chronic problem of interface between port and city. This reality further denies Port of Spain its birthright as a Port city. Holistically Port of Spain has suffered from the same affliction that has plagued American cities in the 1960's- the lack of vision and the precedence of private over public concerns resulting in the bastardized urban form we know today.

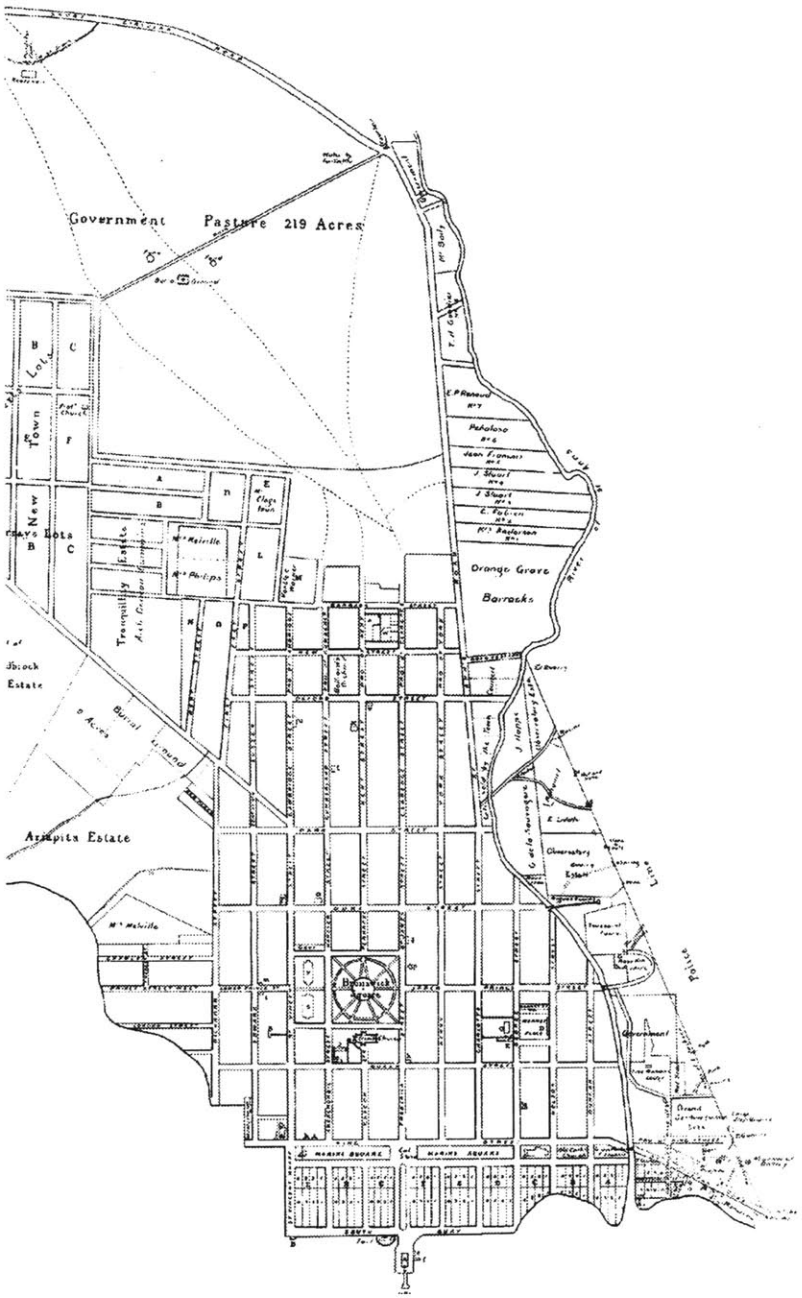
2 Analysis

- Urban Analysis



PLAN OF PORT OF SPAIN SHOWING THE FIRST ELEVEN STREETS

In 1757 the population of Port of Spain was approximately 400 inhabitants. The plan above shows the location of the Santa Ana river prior to the city's expansion to the west

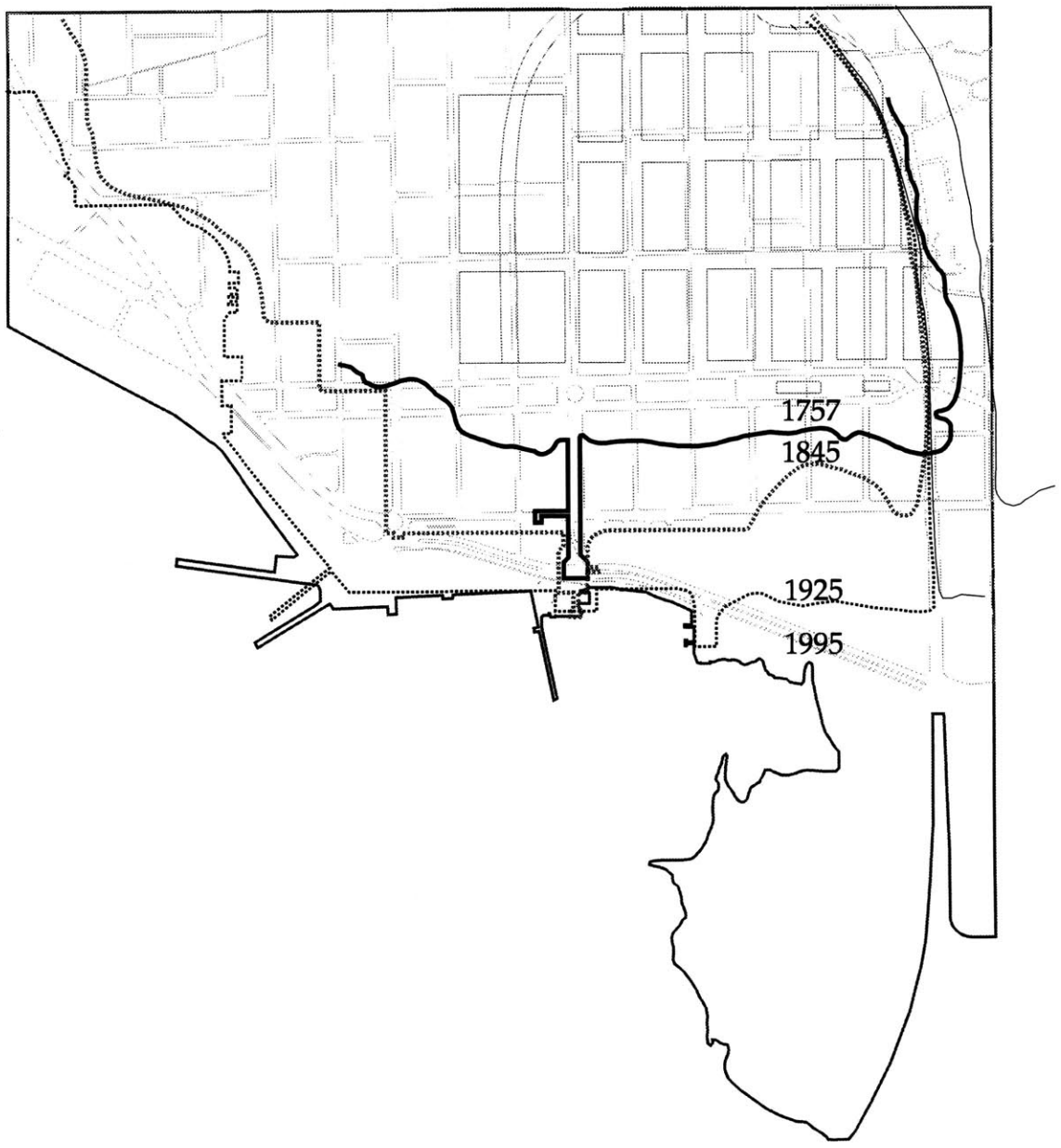


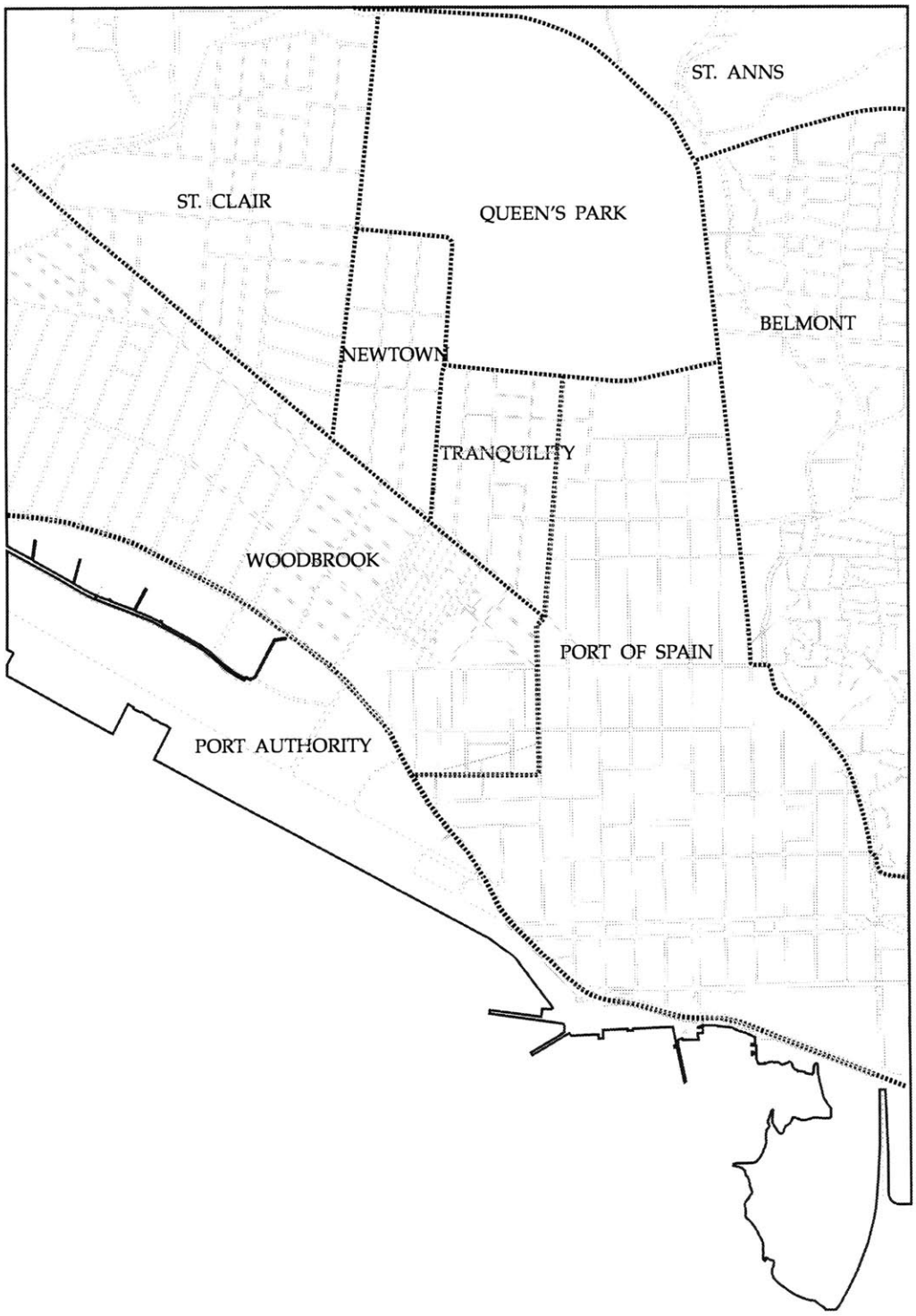
THE 1845 PLAN OF PORT OF SPAIN SHOWS THE EXPANSION WEST AND THE FORMATION OF DISTRICTS

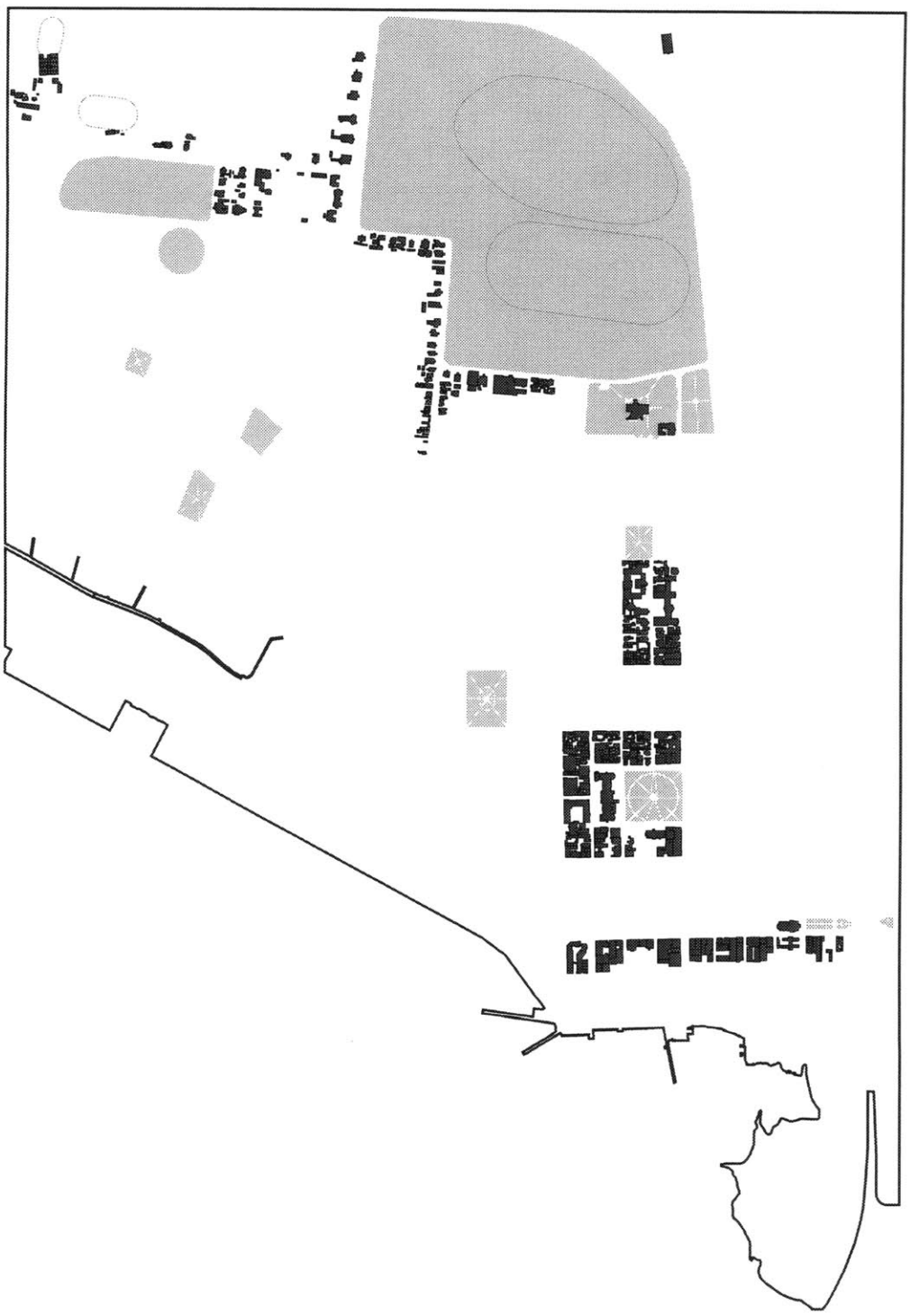
At this time Port of Spain's population had soared to approximately 18000 residents as a result of the historic Cedula to populate issued by the King of Spain in 1783.

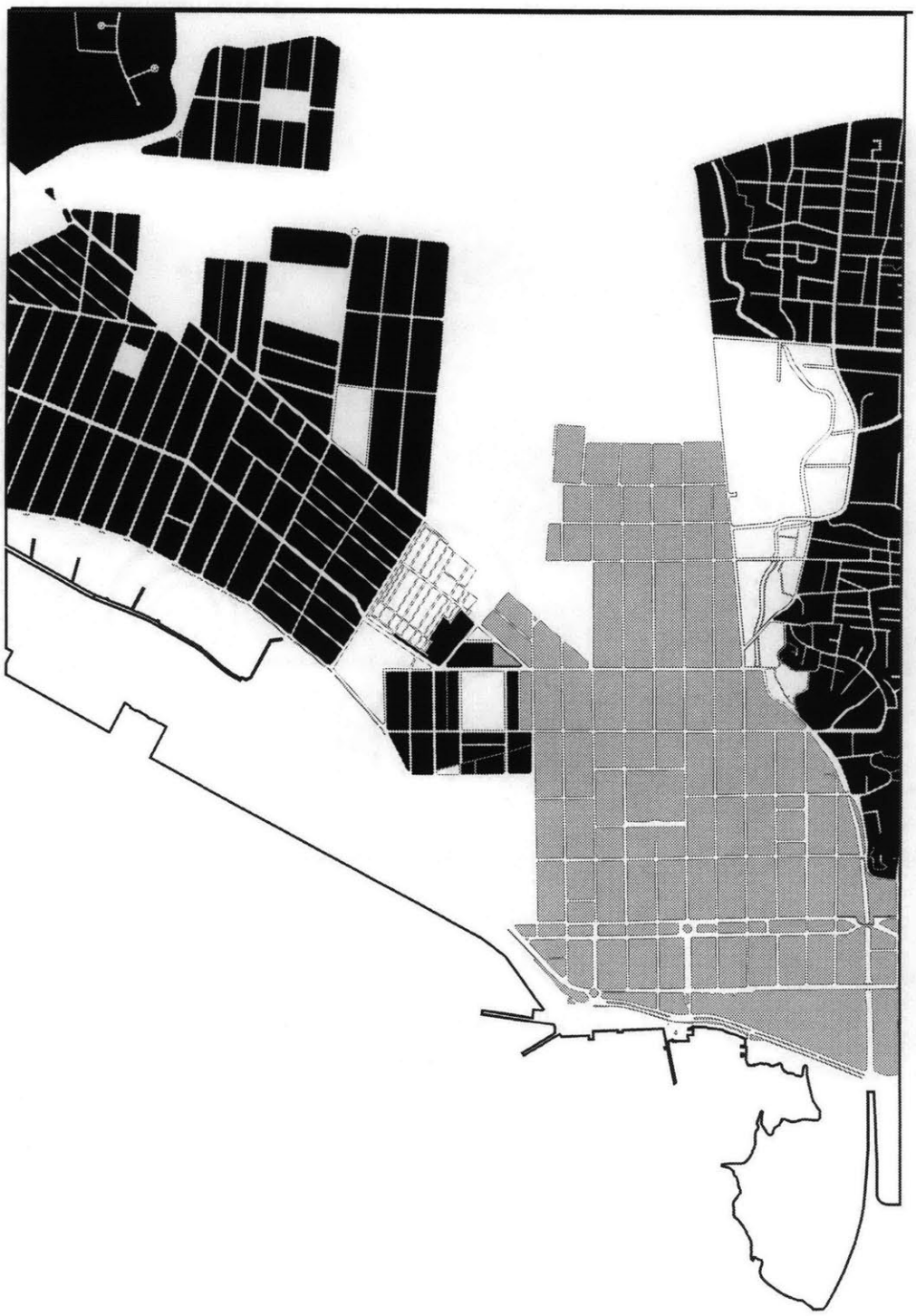

MARAVAL
ST. ANNS
"CHAMPS ELYSEES"
"BLARNEY" now "ELLERSLIE"
CASCADE VALLEY
BELMONT VALLEY
QUEENS PARK SAVANNAH
NEWTOWN
LAVENTILLE
THE SAVANNAH

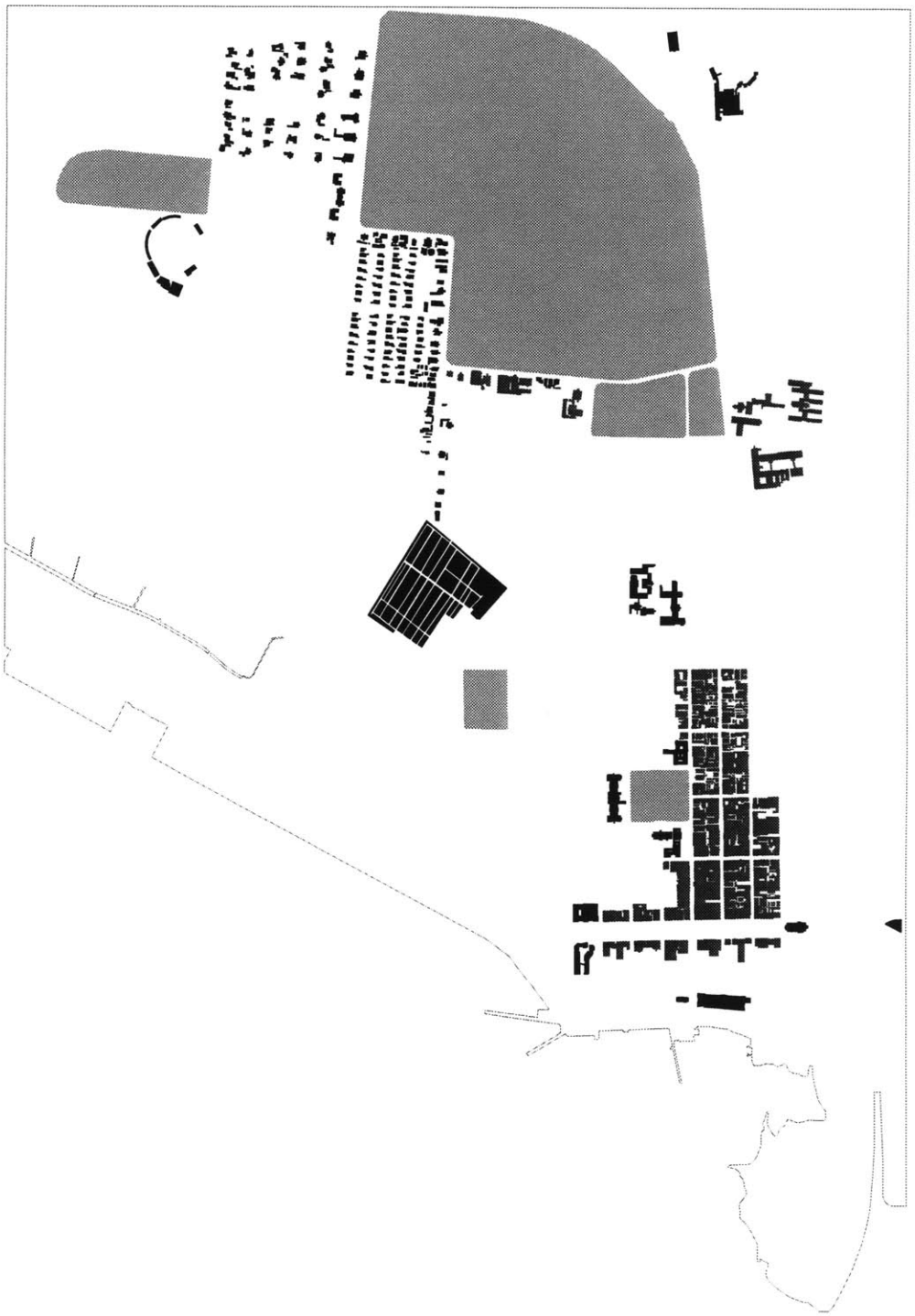

Gulf
of
Paria

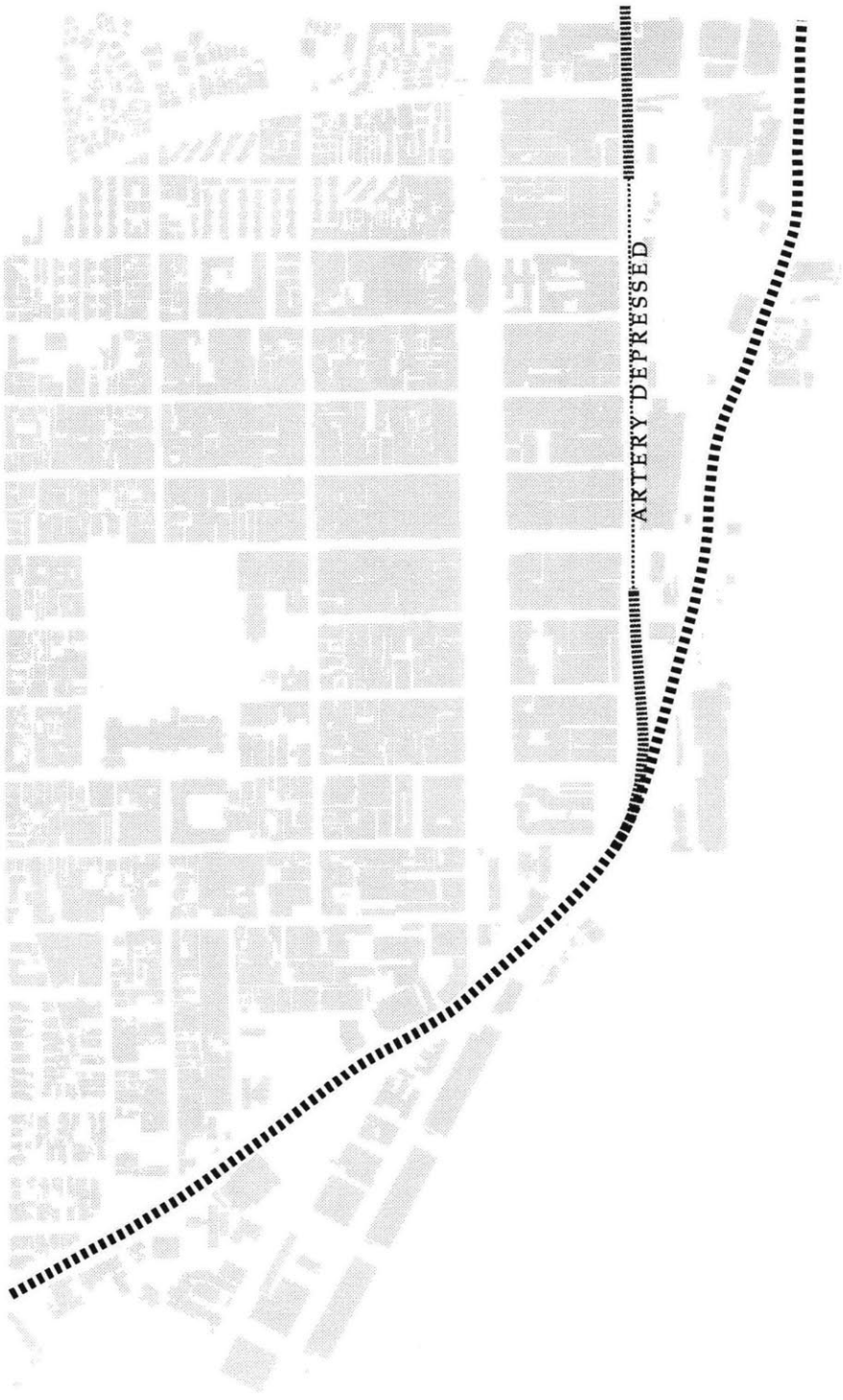

1757
1845
1925
1995

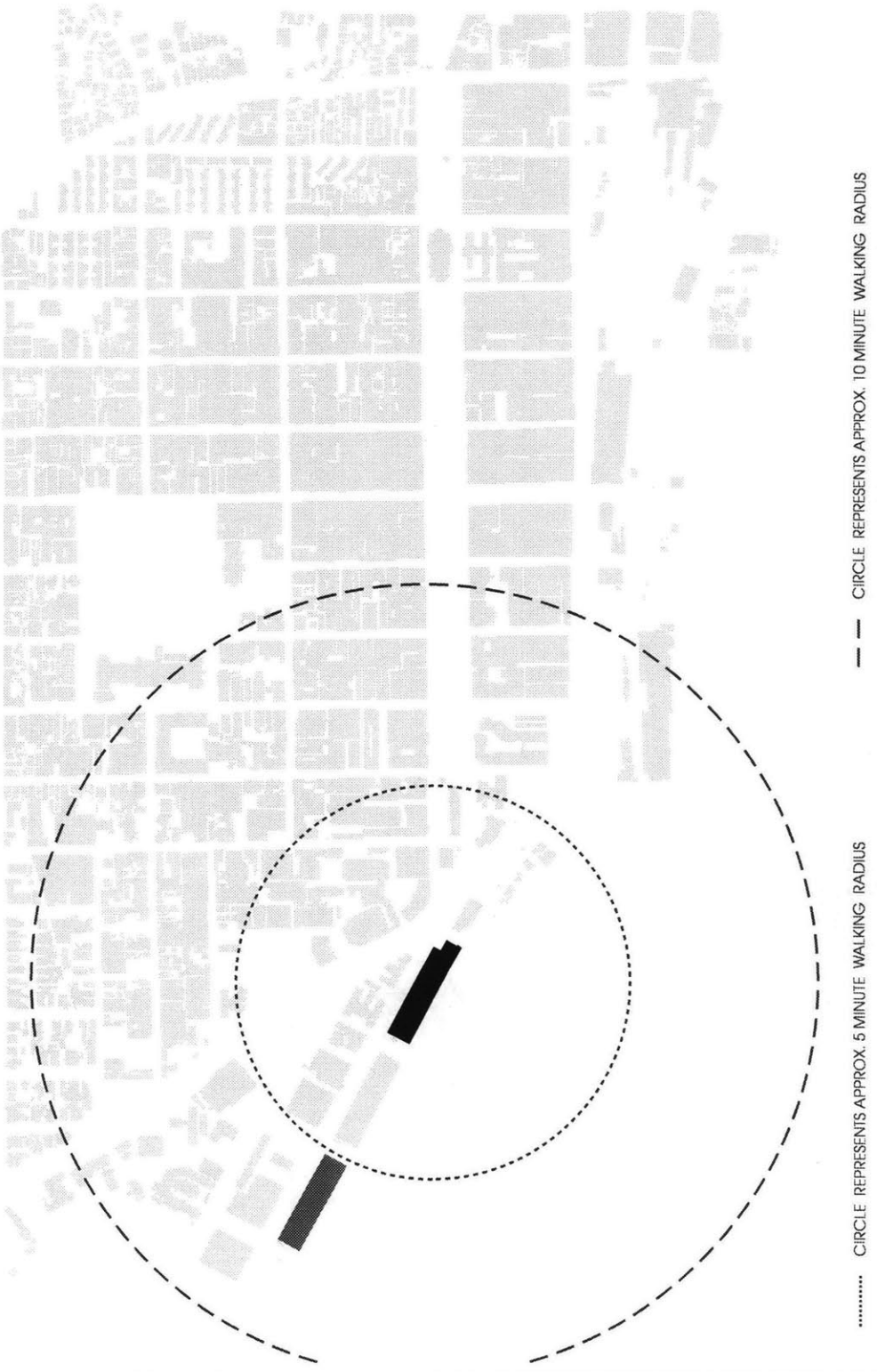

ST. ANNS
ST. CLAIR
QUEEN'S PARK
BELMONT
NEWTOWN
TRANQUILITY
WOODBROOK
PORT OF SPAIN
PORT AUTHORITY

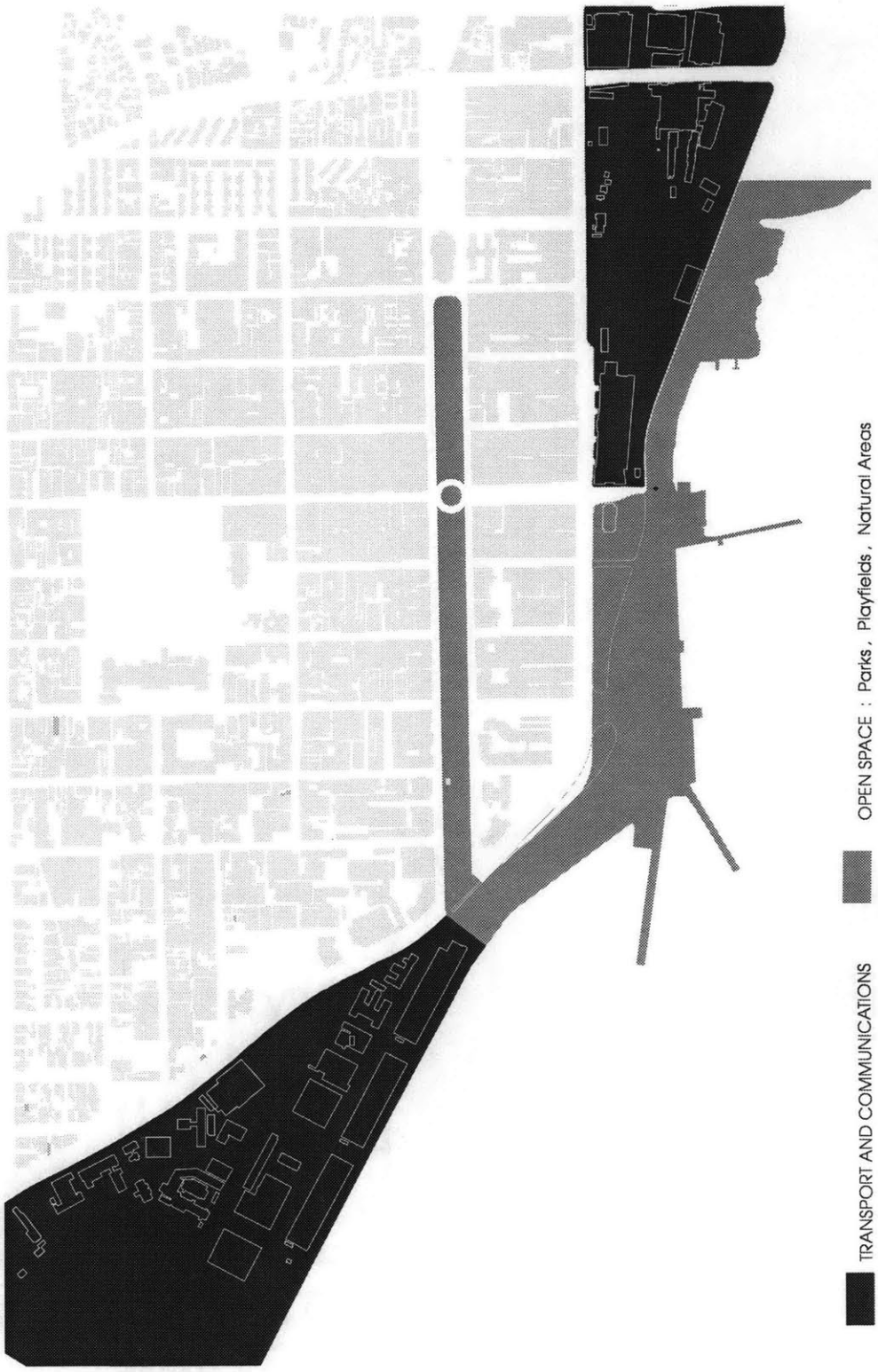







ARTERY DEPRESSED


CIRCLE REPRESENTS APPROX. 10 MINUTE WALKING RADIUS
CIRCLE REPRESENTS APPROX. 5 MINUTE WALKING RADIUS


OPEN SPACE : Parks, Playfields, Natural Areas
TRANSPORT AND COMMUNICATIONS

3

Design

- Proposal
- Economic Background
- Urban Strategy
- Design

PROPOSAL

The primary objective of this thesis is to redesign and integrate the city's tourist Port with downtown Port-of-Spain. In addition, I also propose to restore and restructure the Port-of-Spain waterfront in an attempt to improve the quality of its urban experience, as well as to provide an environment conducive to the expanding tourism industry.

ECONOMIC BACKGROUND

The Caribbean city was founded primarily on utilitarian principles, a functionalist aesthetic and driven by a colonial industry. At the time of its inception, West Indian Ports functioned as "barter points" where slaves were imported and sugar, cocoa and other products were exported to the Colonies. In the years following emancipation up until the 1920's West Indian cities continued to function as Port towns under the auspices of the various colonizers (French, Spanish, English and Dutch).

The 1920's marked the onset of a period of economic restructuring as many regional nations sought various ways to start developing there respective economies and attendant infrastructure. Most Caribbean nations relied heavily on tourism as the main source of revenue, while other countries targeted agricultural export such as bananas, cocoa, coffee and sugar cane as the backbone of their economic strife. Some countries invested heavily in neither, instead seeking a balance of the two. Whatever the economic percentile, most regional nations relied on tourist dollars to some degree for economic stability. As a result, most regional cities developed according to the dictates of the tourist experience particularly with respect to their ports and supporting infrastructure. This sensibility spawned the development of the "Cruise Ship Complex". These facilities are expressly designed as Ports and Shopping Malls combined, offering a host of local as well and regional merchandise. In most cases, particularly in smaller islands these facilities are an integral part of the downtown commercial and cultural experience.

Trinidad however stands as an economic exception, with it's modern economy founded on natural gas, petro chemical products and oil refining. As such Trinidad's economic climate fueled a lifestyle unattainable by any other nation in the region. Although Trinidad's economy has historically been one of the strongest in the region, the most significant milestone in the Trinidadian economy occurred in 1973 when OPEC increased the price of oil, marking the true turning point of the Trinidadian economy. Almost overnight Trinidad's revenues from oil refining multiplied seven fold, and the country became wealthy enough to implement economic initiatives unrivaled by any other Caribbean nation. OPEC's decision to raise oil prices bloated the Trinidadian economy with windfall profits. Construction, commerce and real estate speculation boomed as oil dollars were spent on luxuries or channeled into projects like Riverside Plaza and the US$100 million Caroni Racetrack complex (complete with 700 air-conditioned stables for the horses). Suddenly it was a sellers market for labor power. Real wages rose steadily while unemployment fell from 17% to 11% in ten years. The seemingly "easy street" mentality began to permeate government offices promoting a collective malayse in the workplace(some public workers stopped work at 10:00am). In addition to lowered productivity escalating corruption and scandal further deteriorated morale as well as financial affairs. The oil boom which transformed the face of Port-of Spain peaked in 1978 and by 1983 the crash was a reality. Initially Trinidadians refused to accept the economic reality and that the boom was really over. Export revenues fell 18% in the first half of 1982, while spending on imports leapt by 23.4%. By the early 1990's this trend lead to an import boom of TT $900 million annual food bill. Prompted by a decade of economic recession, the Trinidadian government sought to diversify its economic structure in an attempt to shift away from it's dependency on oil.

Today the Trinidadian economy reflects a broad range of interests from Finance and Banking services to Export Manufacturing to Tourism, which is fast becoming one of the countries most rapidly expanding markets. In light of this economic trend the government has implemented programs to improve its ports and tourist infrastructure as well as other initiates and policies designed to attract foreign revenue. Some of the more notable projects and incentives:

- Port renovations (Airport and Cruiseship)
- Tax break incentives to Cruise Lines (additional incentives to overnighting Cruise Liners)
- The construction of four multi-million dollar Resort hotels for Trinidad's pristine north coast
- Establish Tourism development Zones (Duty Free Zones, Eco Zones)

THE URBAN STRATEGY

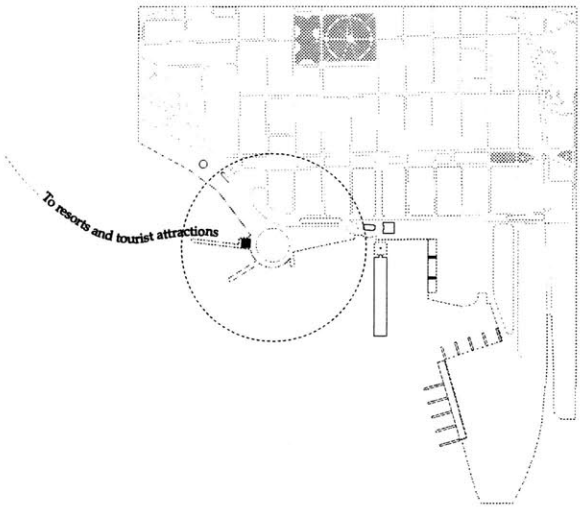
The urban design strategy employed in this proposal will be achieved in three phases. The first objective is to relocate the Port such that it directly engages the city's urban fabric. The second objective is to make the Port of Spain Waterfront attractive and accessible to tourists and residents alike. The third parameter would be to introduce a series of programmatic (residential, commercial mixed use developments) components to revitalize the deteriorated waterfront fabric.

CITY AS TERMINAL

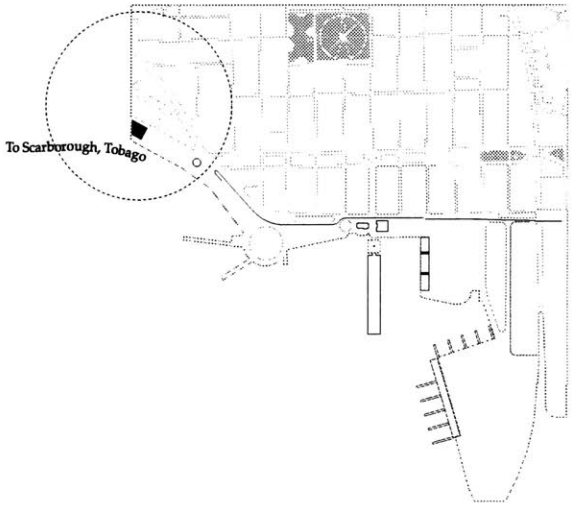
The urban concept for this proposal is hinged on the idea of the city as the terminal. This approach which counters the typical "Cruise Ship Terminal" model attempts to provide a condition which will cater to the tourist experience as well as improve Port of Spain's urban experience. To achieve this, the traditional terminal will be reduced to it's bare essence (customs, information kiosks etc.) to a kind of security checkpoint.. The purpose for this structure will be purely "interface"(for getting tourists on and off the Cruise ship), all other "tourist attractions" will be organized around a waterfront square which connects to the core of the city This interface structure will open up directly to the waterfront plaza which will be programmed with goods and services which would have been previously found at the terminal. At this point (along a prescribed sequence) the tourist will be approximately one minute from the core of the city. In terms of other amenities, the square will also contain restaurants, cafes, specialty shops and other facilities appealing to tourists and residents alike.

LOCATION OF PORTS (PROPOSED)

CIRCLE REPRESENTS 5 MINUTE WALKING RADIUS



SHUTTLE PORT



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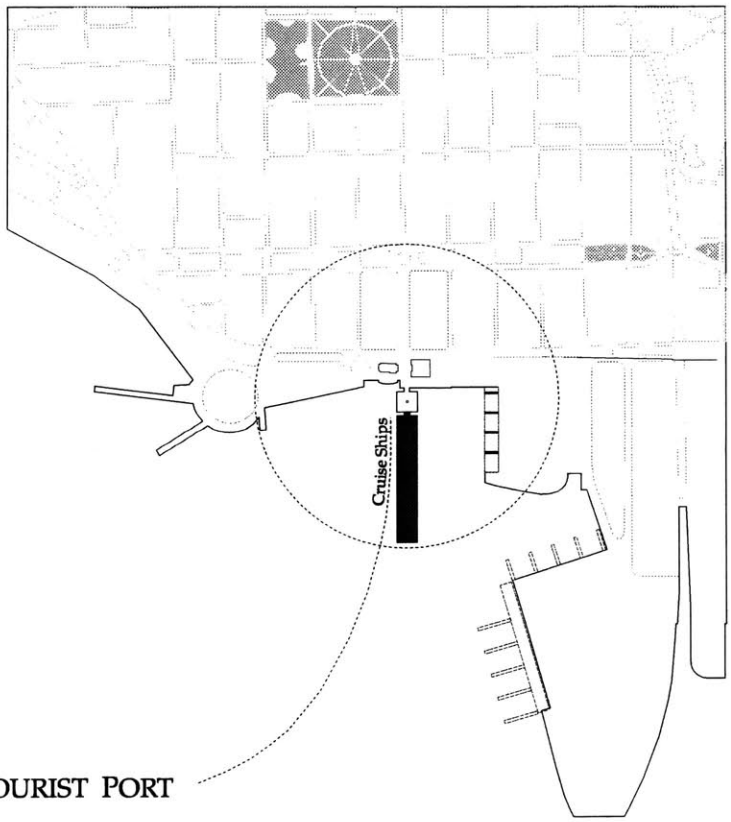
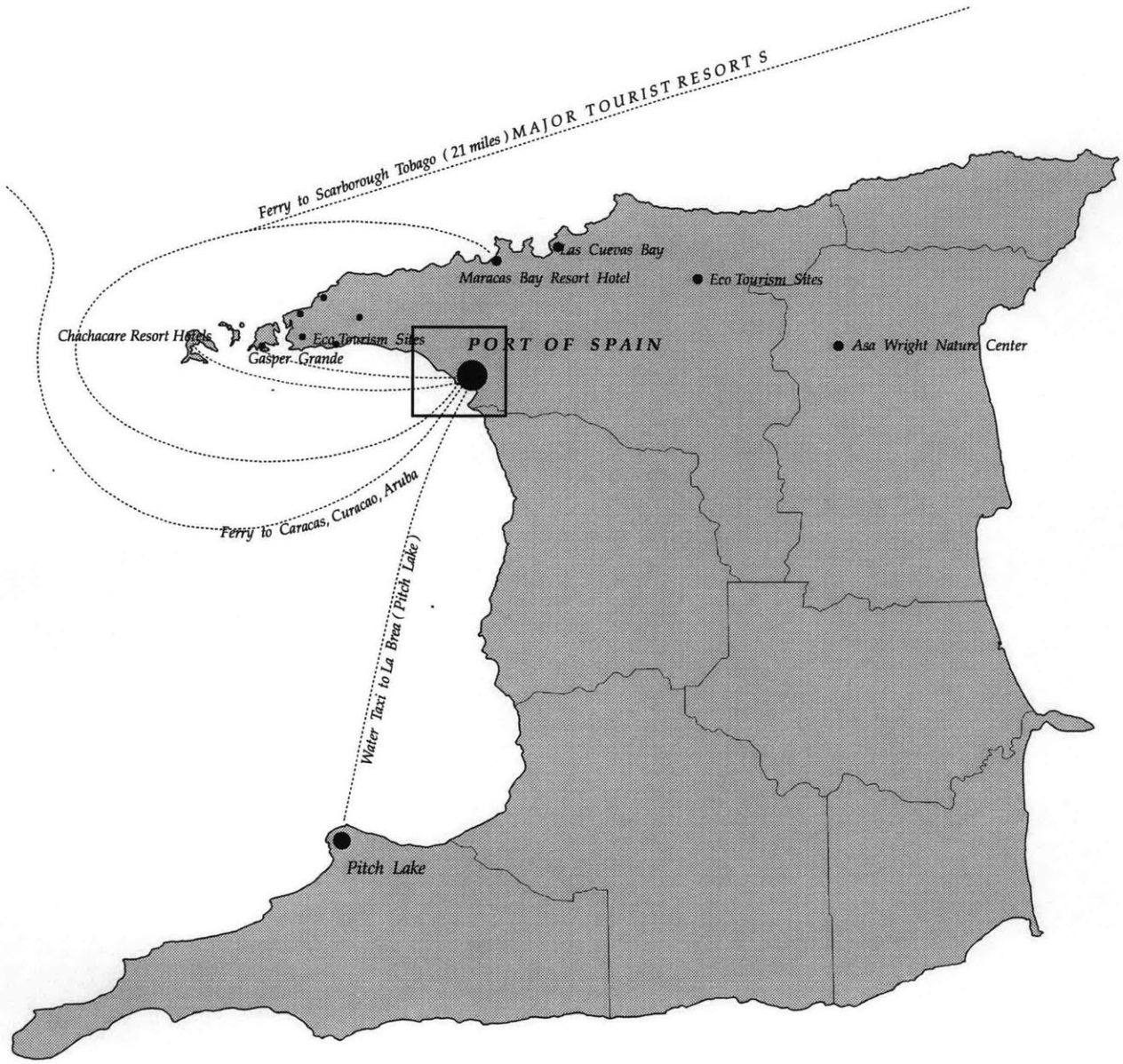
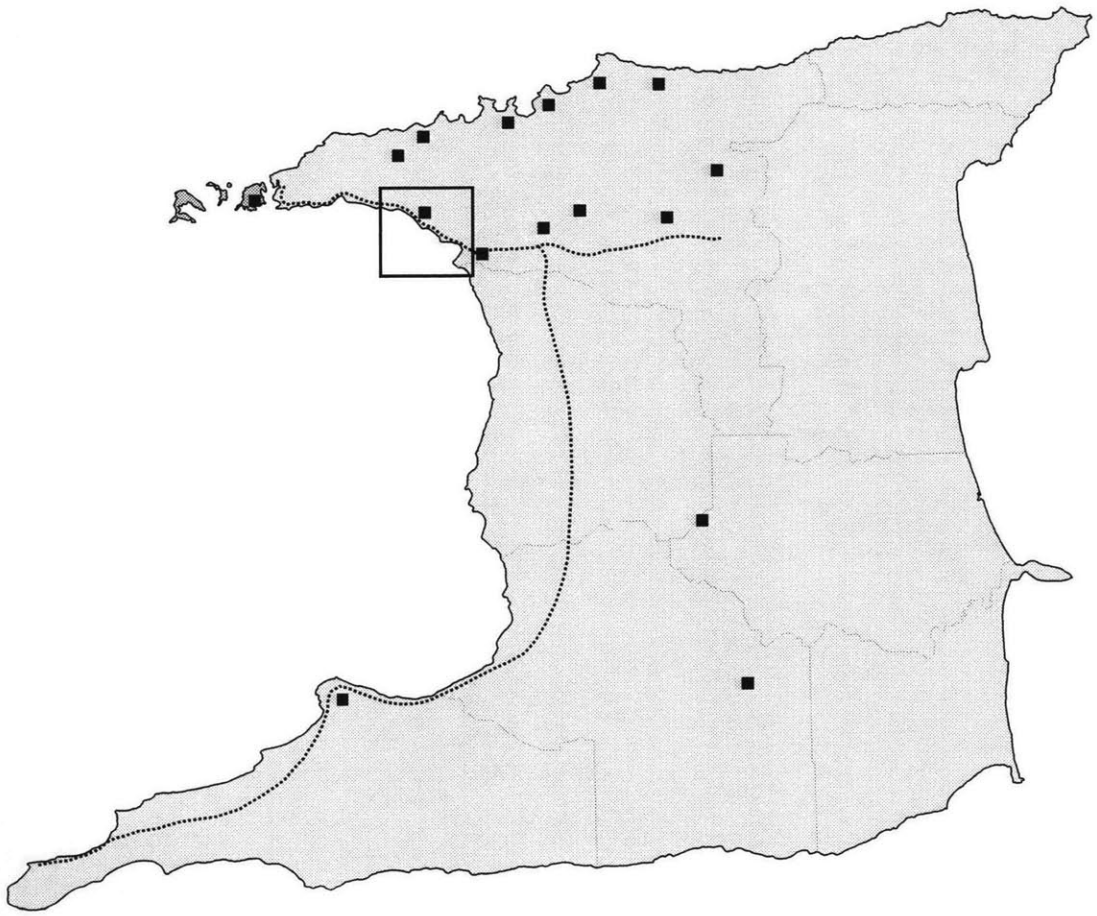


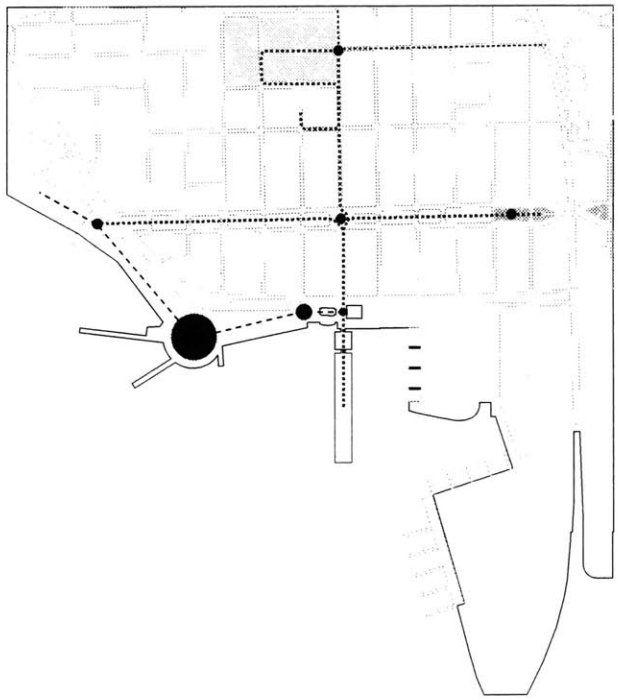
TOURIST PORT


Ferry to Scarborough Tobago (21 miles) MAJOR TOURIST RESORTS
Las Cuevas Bay
Maracas Bay Resort Hotel
Eco Tourism Sites
Chachacare Resort Hotels
Eco Tourism Sites
PORT OF SPAIN
Asa Wright Nature Center
Gasper Grande
Ferry to Caracas, Curacao, Aruba
Water Taxi to La Brea (Pitch Lake)
Pitch Lake

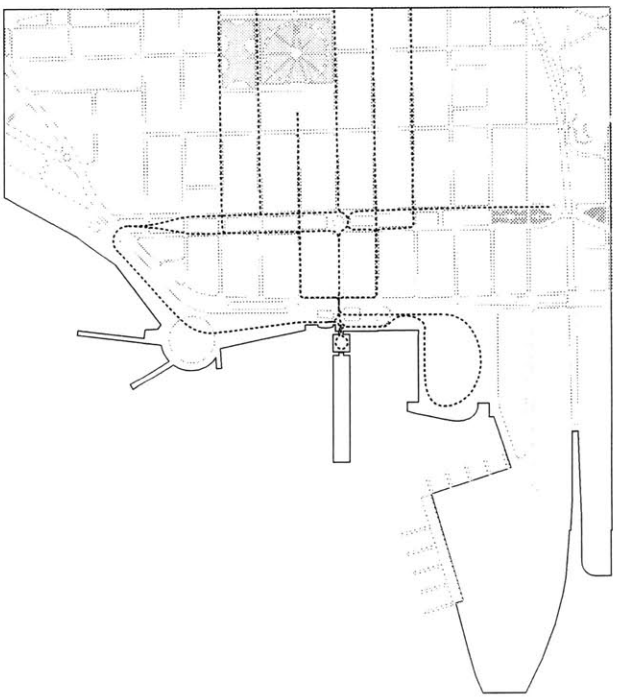


..... MAJOR HIGHWAY SYSTEM

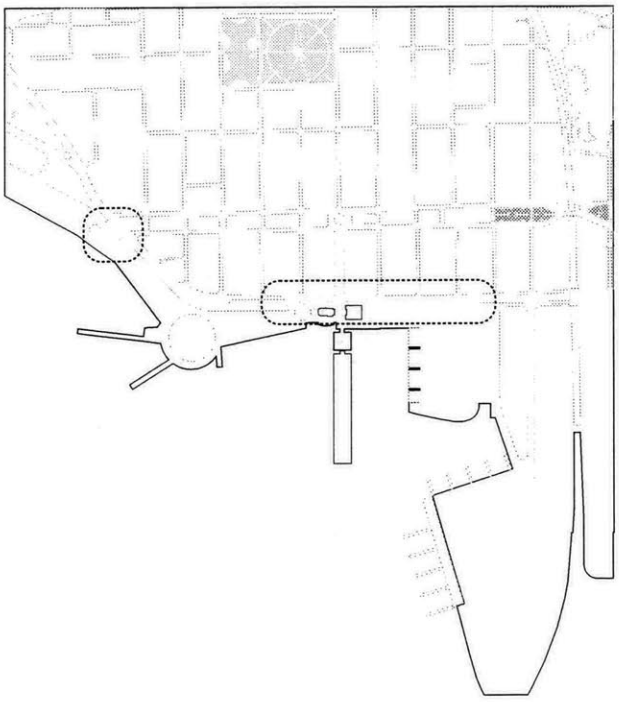
TOURIST CIRCULATION
& URBAN NODES



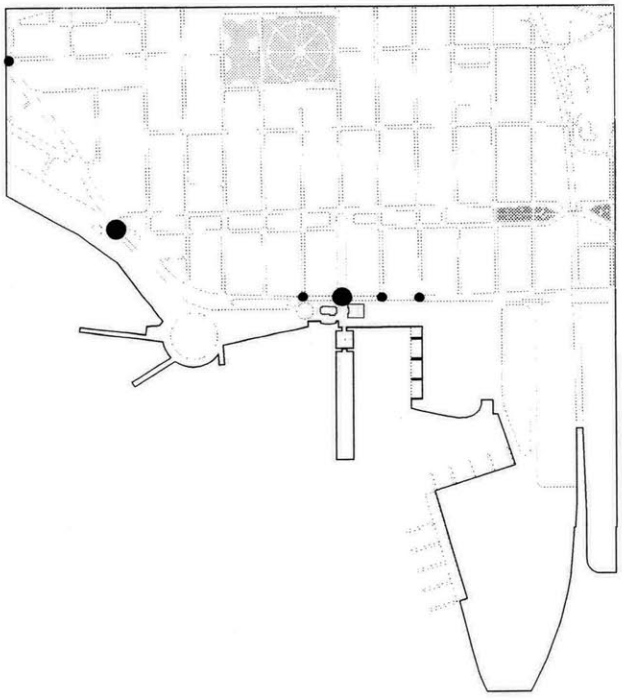
RESIDENT CIRCULATION

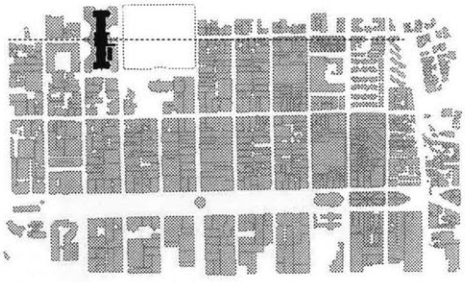


WATERFRONT LINKS



CROSSING POINTS





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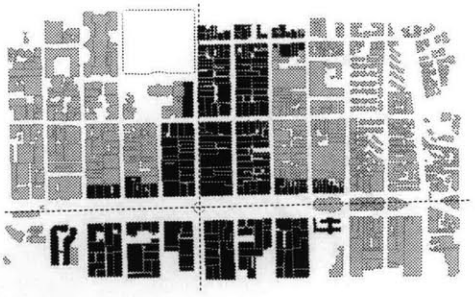

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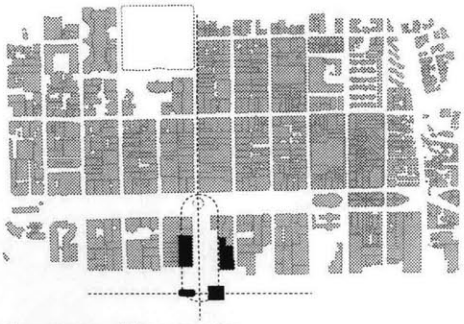
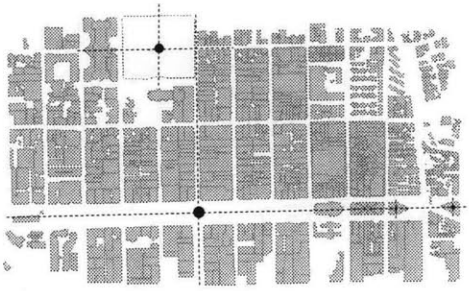
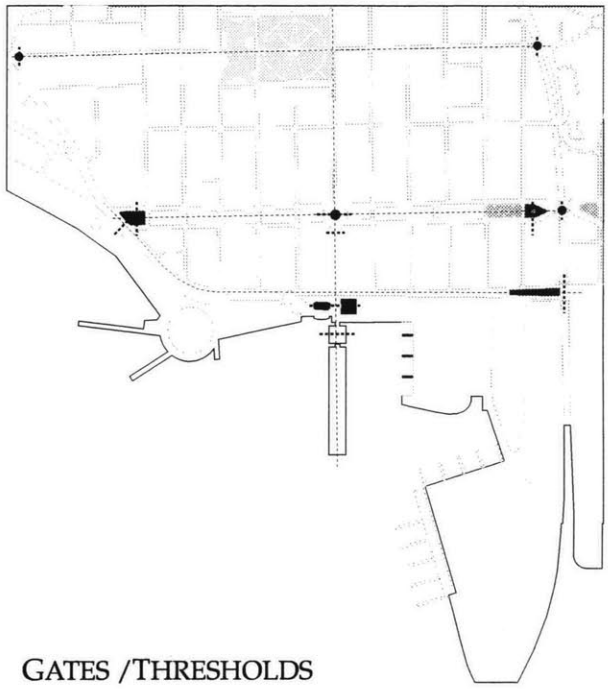


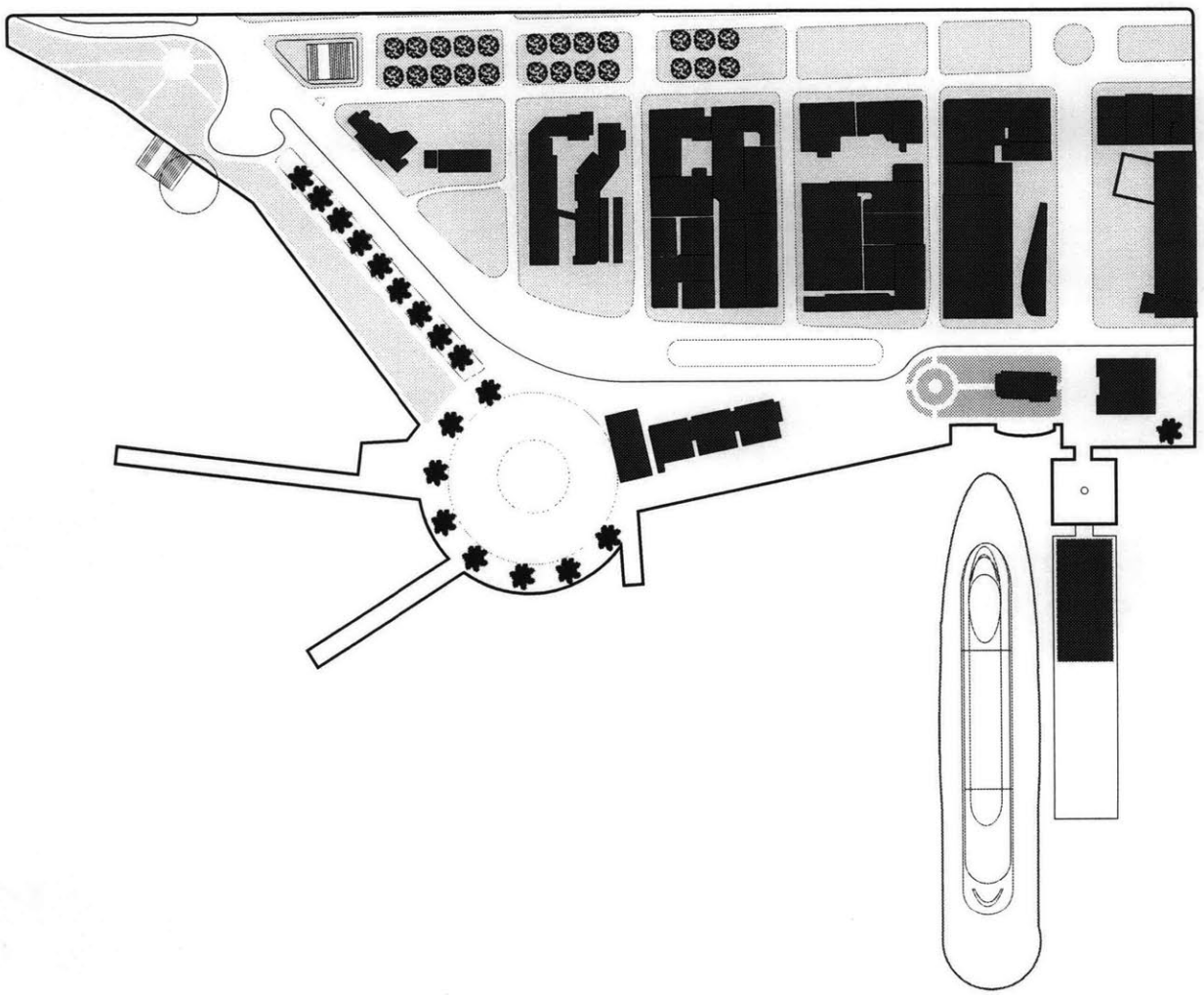
CENTER : TOURIST

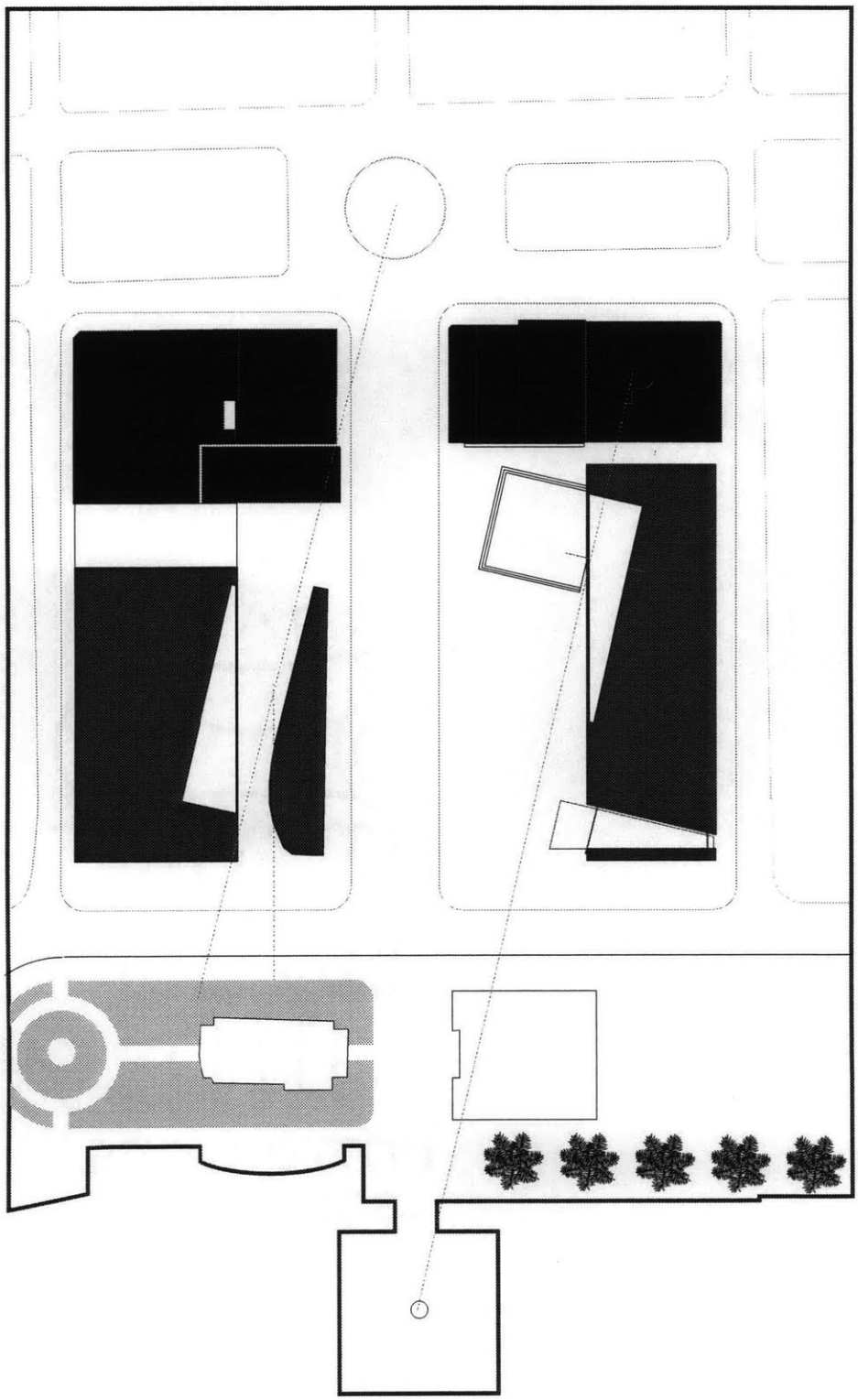


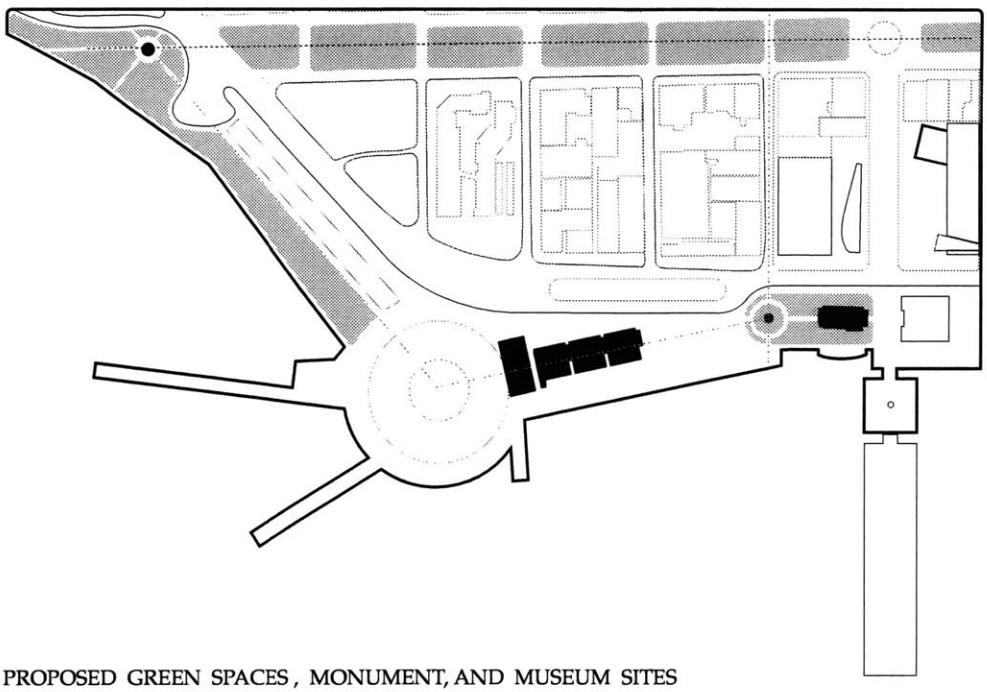
CENTERS : MONUMENTAL



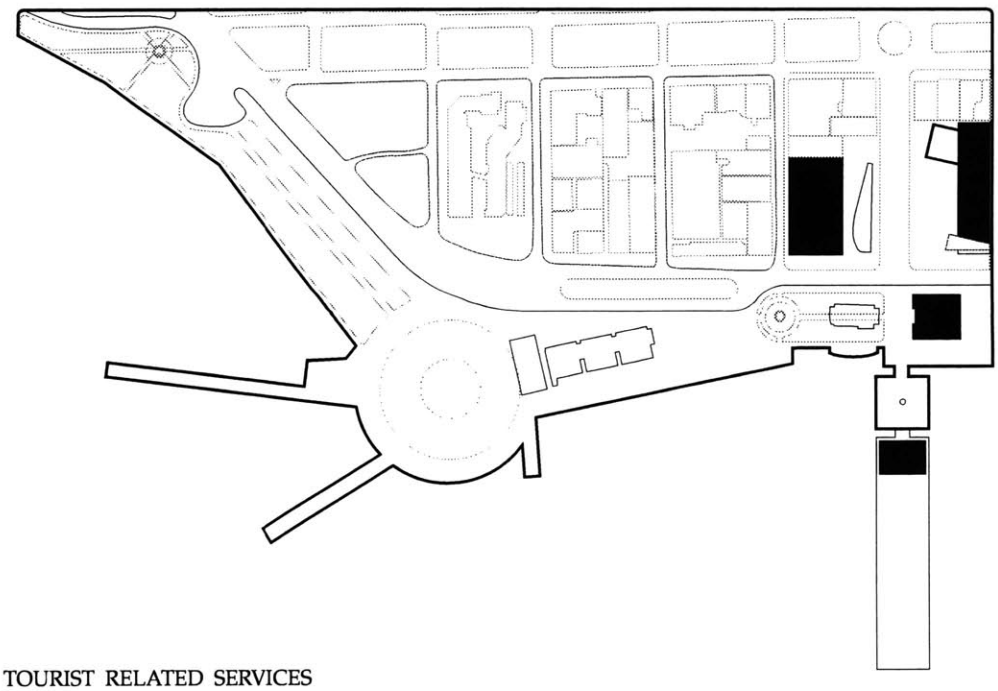
GATES /THRESHOLDS



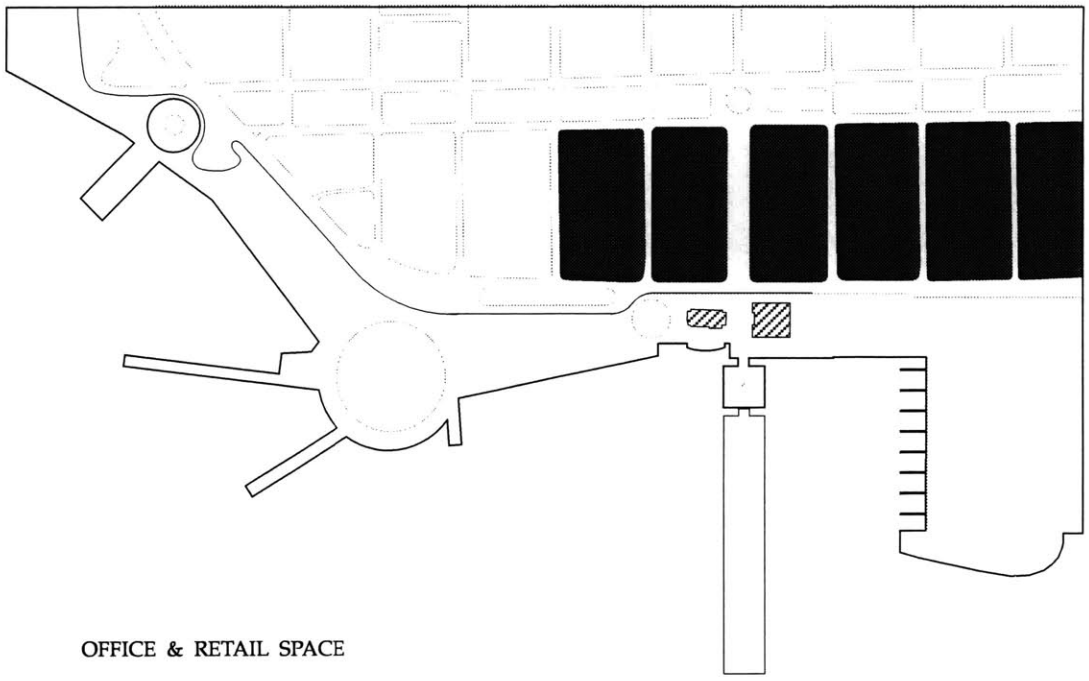




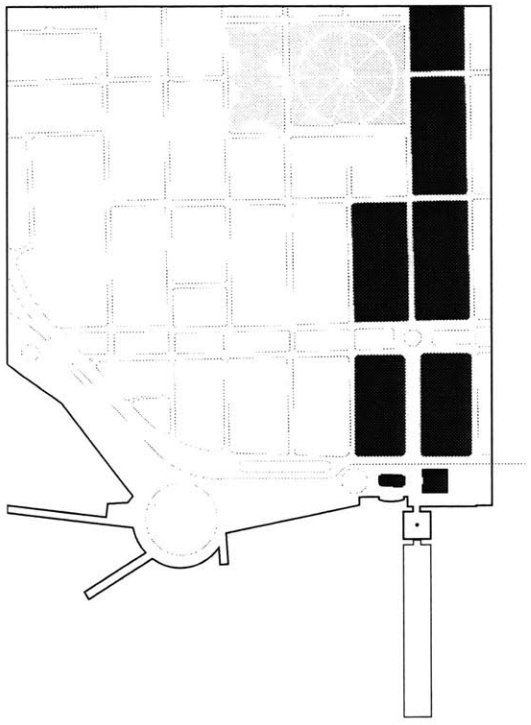
PROPOSED GREEN SPACES , MONUMENT, AND MUSEUM SITES



TOURIST RELATED SERVICES



OFFICE & RETAIL SPACE



DUTY FREE ZONES

4

Appendix

- Planning Manifesto

110. ...After having made the discovery and selected the province, district, and land to be peopled and the sites where new settlements are to be founded, those who intended to settle are to proceed in the following manner:

On arriving at the locality where the new settlement is to be founded (which according to our will and ordinance must be one which is vacant and can be occupied without doing harm to the Indians and natives or with their free consent), the plan of the place, with its squares, streets and building lots, is to be outlined by means of measuring by cord and ruler, beginning with the main square from which streets are to run to the gates and principal roads and leaving sufficient open space so that even if the town grows it can always spread in a symmetrical manner. Having thus laid out the chosen site the settlement is to be founded in the following form:

The chosen site shall be on an elevation; healthful; with means of fortification; fertile and with plenty of land for farming and pasturage; fuel and timber; fresh water, a native population, commodiousness; resources and of convenient access and egress. It shall be open to the north wind. If on the coast, care is to be taken that the sea does not lie to the south or west of the harbour. If possible, the port is not to be near lagoons or marshes in which poisonous animals and corruption of air and water breed.

112. In the case of a sea-coast town, the main plaza, which is to be the starting point for the building of the town, is to be situated near the landing place of the port. In inland towns the main plaza should be in the centre of the town and of an oblong shape, its length being equal to at least one and a half times its width, as this proportion is the best for festivals in which horses are used and any other celebrations which have to be held.

113. The size of the plaza shall be in proportion to the number of residents, heed being given to the fact that towns of Indians, being new, are bound to grow, and it is intended that they shall do so. Therefore, the plaza is to be planned with reference to the possible growth of the town. It shall not be smaller than two hundred feet wide and three hundred feet long nor larger than eight hundred feet long and three hundred feet wide. A well-proportioned medium size plaza is one six hundred feet long and four hundred feet wide.

114. From the plaza the four principal streets are to diverge, one from the middle of each of its sides, and two streets are to meet at each of its corners. The four corners of the plaza are to face the four points of the compass, because thus, the streets diverging from the plaza will not be exposed to the four principal winds, which would cause much inconvenience.

115. The whole plaza and the four main streets diverging from it shall have arcades, for these are a great convenience for those who resort thither for trade. The eight streets which run into the plaza at its four corners are to do so freely without being obstructed by the arcades of the plaza. These arcades are to end at the corners in such a way that the sidewalks of the streets can evenly join those of the plaza.

116. In cold climates the streets shall be wider; in hot climates narrow; however, for purpose of defence, and where horses are kept, the streets had better be wide.

117. The other streets laid out consecutively around the plaza are to be planned that, even if the town should increase considerably in size, it would meet w no obstruction which might disfigure what had already been built or be a detrimen the defence or convenience of the town.

118. At certain distances in the smaller town, well-proportioned plazas are to laid out on which the main church, the parish church or monastery shall be buil that the teaching of religious doctrine may be evenly distributed.

119. If the town lies on the coast, its main church shall be so situated that it may visible from the landing place, and so built that its structure may serve as mean defence for the port itself.

120. After the plaza and streets have been laid out, building lots are to designated, in the first place, for the erection of the main church, the parish monastery, and these are to occupy respectively an entire block, so that no otl structure can be built next to them excepting such as contribute to th commodiousness or beauty.

121. Immediately afterwards, the place and site are to be assigned for the Ro Town Council House, the Custom House and Arsenal, which is to be close to church and port, so that in case of necessity one can protect the other. The hosp for the poor and sick of non-contagious diseases shall be built next to the chur forming its cloister.

122. The lots and sites for slaughter houses, fisheries, tanneries, and such l productive of garbage shall be so situated that the latter can be easily disposed

123. It would be of great advantage if inland towns, at a distance from ports, w built on the banks of a navigable river, in which case an endeavour should be mc to build on the northern river bank, all occupations producing a garbage be relegated to the river bank or sea situated below the town.

124. In inland towns the church is not to be on the plaza but at a distance from it, in a situation where it can stand by itself, separate from other buildings, so that it can be seen from all sides. It can thus be made more beautiful and it will inspire more respect. It should be built on high ground, so that in order to reach its entrance people will have to ascend a flight of steps. Nearby and between it and the main plaza, the Royal Council and Town House and the Custom House are to be erected in order to increase its impressiveness but without obstructing it in any way. The hospital of the poor who are ill with non-contagious disease shall be built facing the north, and so planned that it will enjoy a southern exposure.

125. The same plan shall be carried out in any inland settlements where there are no rivers, much care being taken that they enjoy other conveniences requisite and necessary.

126. No building lots surrounding the main plaza are to be given to private individuals, for these are to be reserved for the church, Royal and Town House, also shops and dwellings for the merchants, which are to be first erected. For the erection of the public buildings the settlers shall contribute, and for this purpose a moderate tax shall be imposed on all merchandise.

127. The remaining building lots shall be distributed by lottery to those of the settlers who are entitled to build round the main plaza. Those left over are to be held for us to grant to settlers who may come later or to dispose of at our pleasure. In order that entries of those assignments be better made, a plan of the town is always to be made in advance.

128. After the plan of the town and the distribution of the lots have been made, each settler is to set up his tent on his lot if he has one, for which purpose the captains shall persuade them to carry tents with them. Those who own none are to build huts of such materials as are available, wherever they can be collected. All settlers, with greatest possible haste, are to erect jointly some kind of palisade or dig a ditch around the main plaza so that the Indians cannot do them harm.

129. A common shall be assigned to each town, of adequate size, so that even though it should grow greatly, there would always be sufficient space for its inhabitants to find recreation and for cattle to pasture without encroaching upon private property.

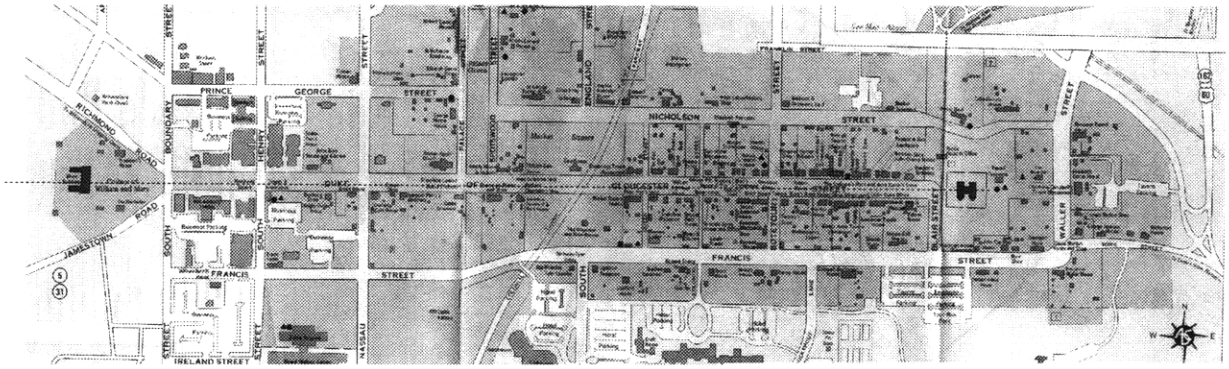
130. Adjoining the common there shall be assigned pastures for team oxen, for horses, for cattle destined for slaughter and for the regular number of cattle which, according to law, the settlers are obliged to have, so that they can be employed for public purposes by the Council. The remainder of land is to be subdivided into as many plots for cultivation as there are town lots, and the settlers are to draw lots for these. Should there be any land which can be irrigated, it is distributed to the first settlers in the same proportion and drawn for by lottery. What remains over is to be reserved for us so that we can make grants to those who may settle later.

131. As soon as the plots for cultivation have been distributed, the settlers shall immediately plant all the seeds that they have brought or are obtainable, for which reason it is advisable that all go well provided. All cattle transported thither by settlers or collected, are to be taken to the pasture lands so that they can begin at once to breed and multiply.

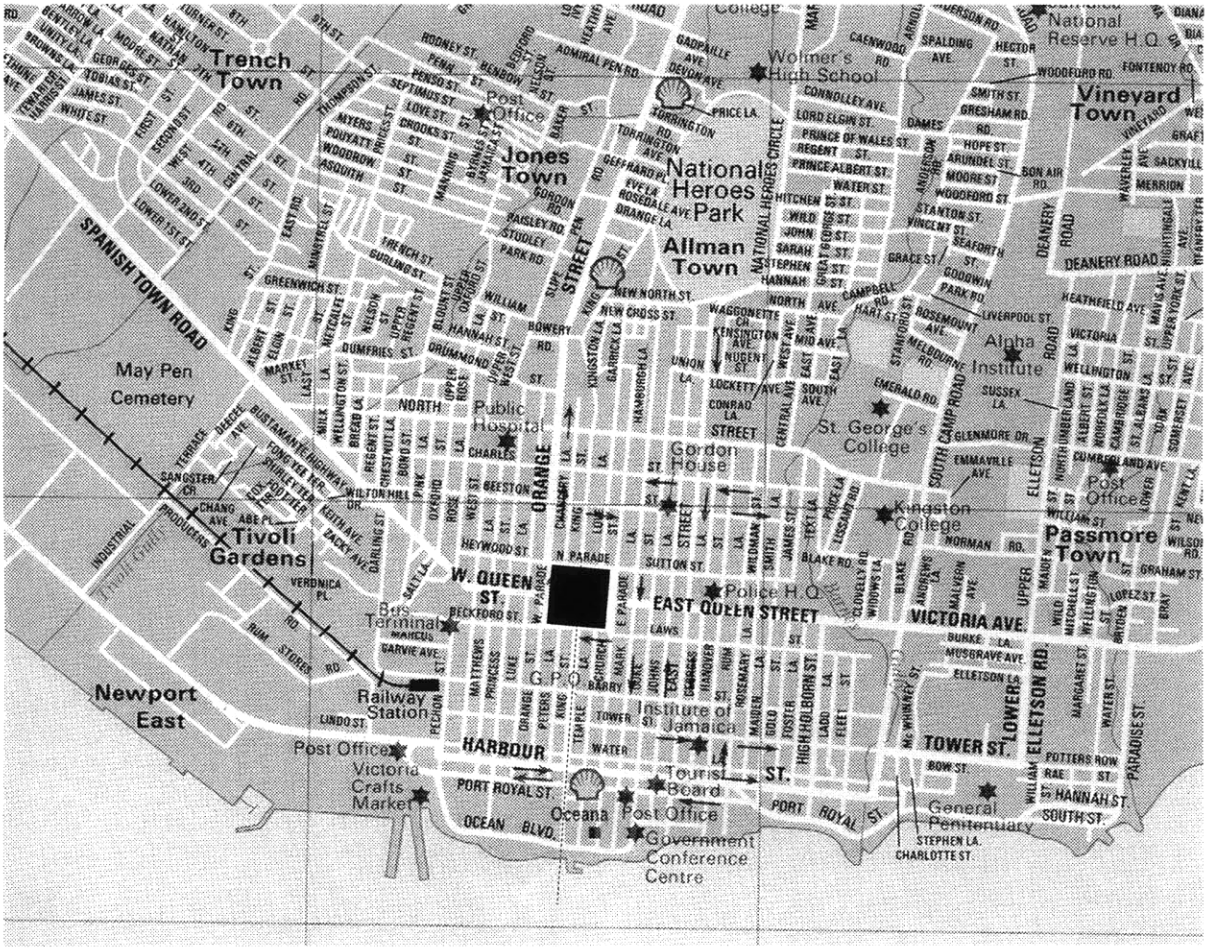
132. Having sown their seeds and provided accommodation for their cattle in such quantities and with such diligence that they can reasonably hope for an abundance of food, the settlers, with great care and activity, are to erect their houses with solid foundations and walls, for which purpose they shall go provided with moulds or planks for making abodes and all other tools for building quickly and at little cost.

133. The building lots and the structures erected thereon are to be so situated that in the living rooms one can enjoy air from the south and from the north, which are the best. All town houses are to be so planned that they can serve as a defence or fortress against those who might attempt to create disturbances or occupy the town. Each house is to be so constructed that horses and household animals can be kept therein, the courtyards and stockyards being as large as possible to insure health and cleanliness.

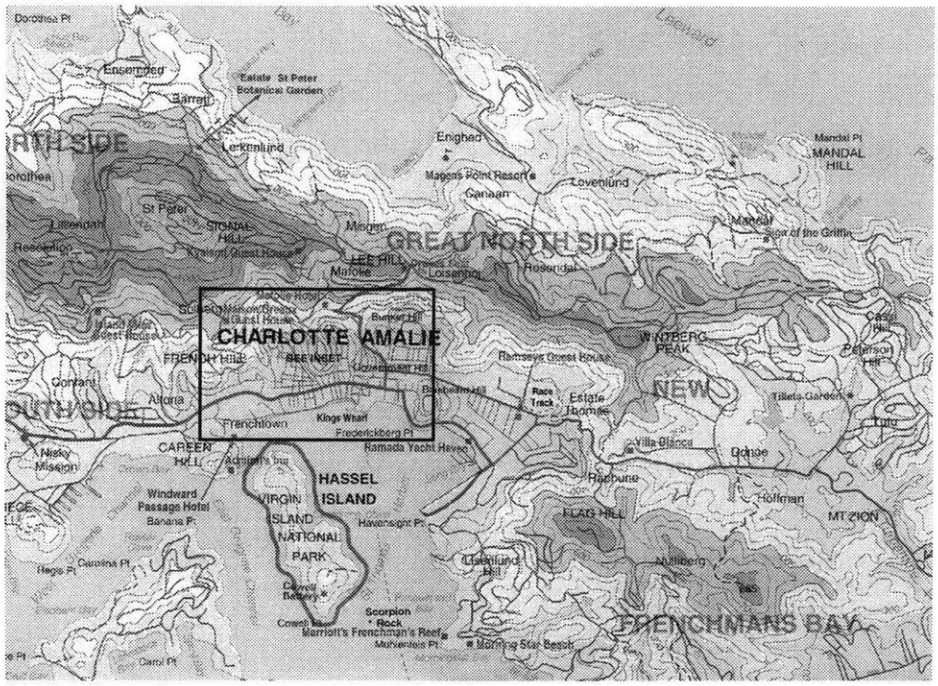
134. Settlers are to endeavour, as far as possible, to make all structures uniform, for the sake of the beauty of the town.



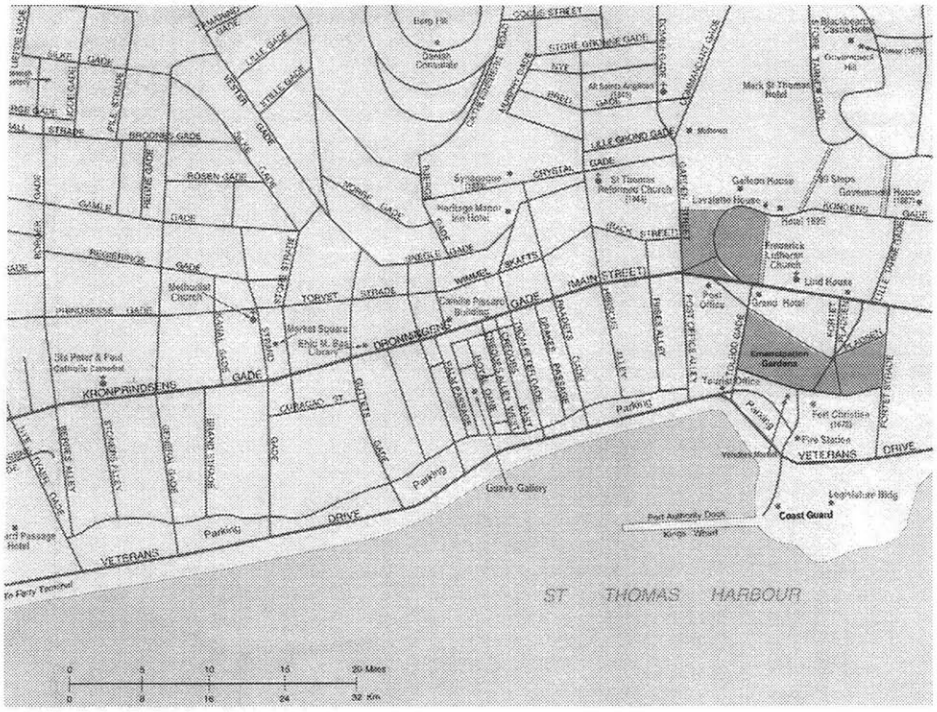
COLONIAL WILLIAMSBURGH

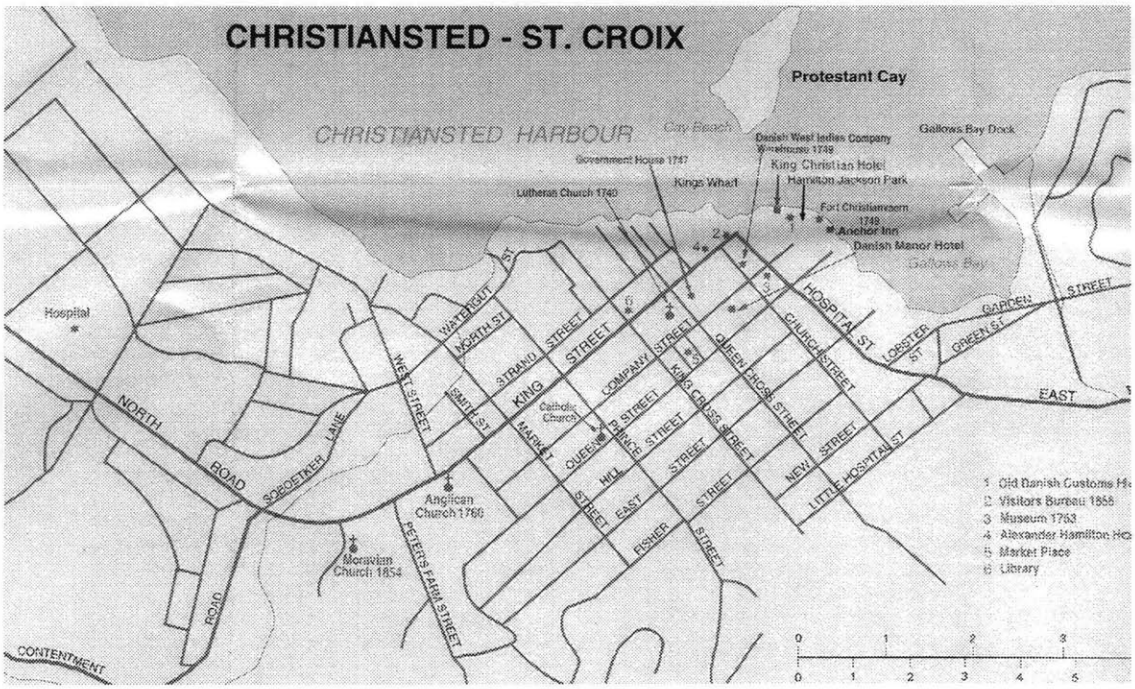


KINGSTON, JAMAICA



CHARLOTTE AMAILE , ST. THOMAS


MAIN STREET
DRONNINGENS GADE
KRONPRINDSENS GADE
VETERANS DRIVE
ST THOMAS HARBOUR
Frederick Lutheran Church
Grand Hotel
Post Office
Emancipation Gardens
Fort Christian (1678)
Fire Station
Legislature Bldg
Coast Guard
Market Square
Elmo M. Bass Library
St Peter & Paul Catholic Cathedral
Methodist Church
Danish Consulate
Government House (1867)
Galleon House
Lawaetze House
Royal (1895)
Lind House
Gomez Gallery
Port Authority Dock
Parking
Parking
Parking



ST. CROIX

St. Croix is a variant of West Indian Urbanism (Town Planning). In the typical format there would be a major waterfront artery parallel to the coastline with a grid or series of grids projected perpendicular to this artery. In the case of St. Croix, the seemingly arbitrary orientation is in response to a series of low foot hills which run almost to the coastline, making it difficult to adopt the orientation of the shoreline.

ILLUSTRATIONS

WITH THE EXCEPTION OF THOSE NOTED BELOW, ALL ILLUSTRATIONS AND PHOTOGRAPHS WERE PRODUCED BY THE AUTHOR. THE CREDITS ARE LISTED BY THE CORRESPONDING PAGE NUMBER

7. Philips' Caribbean Modern School Atlas. George Philip & Sons Limited, London, 1980.
9. Land & Surveys Department, Port of Spain, Trinidad
19. Postcard
19. Ajoupa: Architecture of the Caribbean
20. Ajoupa: Architecture of the Caribbean
22. Historic Architecture of the Caribbean
23. Historic Architecture of the Caribbean
27. Berthelot, Jack. et. al. Caribbean Style. Clarkson N. Potter, Inc. New York 1985.
30. Tourist Publication
30. Land & Surveys Department, Port of Spain, Trinidad
31. Land & Surveys Department, Port of Spain, Trinidad
32. Tourist Publication
33. Waterfront: una nuova frontiera urbana,
34. Rotch Visual Collection, MIT.
35. Rotch Visual Collection, MIT.
36. The Waterfront
38. Land & Surveys Department, Port of Spain, Trinidad
39. Land & Surveys Department, Port of Spain, Trinidad
40. Land & Surveys Department, Port of Spain, Trinidad
72. Tourist Publication
72. Tourist Publication
73. Tourist Publication
74. Tourist Publication

5 Bibliography

BIBLIOGRAPHY

Antoniades, Anthony, C. Poetics of Architecture. Van Nostrand Reinhold, New York. 1990.

Bacon, Edward. Design of Cities. Viking Penguin, New York 1976.

Banham, Martin. African and Caribbean Theater. Cambridge University Press, Cambridge. 1994.

Berthelot, Jack. et. al. Caribbean Style. Clarkson N. Potter, Inc. New York 1985.

Bruttomesso, Rinio. Waterfront: una nuova frontiera urbana, Venezia 199.

Conrads, Ulrich. Programs and manifestoes on 20th-century architecture. MIT Press, Cambridge. 1971.

Douglas, Robert. Caribbean Heritage: Architecture of the islands. Darkstream Publications, 1996

Duncan, James S. The city as text: the politics of landscape interpretation in the Kandayan Kingdom. Cambridge University Press, Cambridge, 1990.

Gosner, Pamela. Caribbean Georgian: The Great and Small Houses of the West Indies. Washington, Three Continents Press. 1982.

Hall, Edward, T. The Hidden Dimension. Doubleday. New York. 1966.

Newel Lewis, John. Ajoupa: Architecture of the Caribbean, Trinidad's heritage. John Newel Lewis, Trinidad, 1983.

Ockman, Joan. Architecture and Culture. Rizzoli International Publications, Inc. New York. 1993.

Philips' Caribbean Modern School Atlas. George Philip & Sons Limited, London, 1980.

Rigby, Dick. Waterfronts:Cities Reclaim Their Edge. Mc Graw Hill, New York. 1995.

Sunshine, Catherine, A. The Caribbean: Survival, Struggle and Soverignty. EPICA Publication, Washington. 1985.

Whiteford, Angus. Buildings of Architectural or Historic Interest in the British West Indies. Johnson Reprint Corporation, New York. 1970